Alcoa Inc.
Remediation Projects Organization

Certification Report for Operation and Interim Capping of Secure Landfill Cell 3 in 2005

February 3, 2006

Report

CERTIFICATION WITH SUBMITTAL OF THE CERTIFICATION REPORT FOR OPERATION AND INTERIM CAPPING OF SECURE LANDFILL CELL 3 IN 2005

All information contained in this document is to the best of our knowledge, factual and represents CDM's total understanding of the conditions and circumstances at the Alcoa facility and impacted area. The conclusions and recommendations contained in this document represent CDM's best professional engineering judgement on remediation that meets those applicable or relevant and appropriate requirements and represents sound engineering practices and principles required to protect public health and the environment.

Signature: _____

Charles A. Jutras
CAMP DRESSER & McKEE

Date: Feb 3, 2006

Reviewed By:

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Section 1
Introduction
1.1 General

Since January 1985, Alcoa Inc. (Alcoa) has been working with the New York State Department of Environmental Conservation (NYSDEC) to develop and implement a remedial waste cleanup program for its Massena West, New York facility. These efforts resulted in the issuance of Records of Decision (RODs) in 1991 and 1992. One of the important requirements stipulated in the ROD issued in March 1991 was the construction of an onsite Secure Landfill (SLF). The subject matter contained within this report addresses construction quality assurance (CQA) issues associated with the construction of Cell 3 of the SLF.

The CQA organization functioned as an independent party that determined, documented and provided assurance that the project was constructed in accordance with the Technical Specifications and Design Drawings. CQA was distinct from Construction Quality Control (CQC) which was a planned system used by the contractors, Envirocon, Perras Environmental Control Inc, and S & L Electric Inc. to control quality of work, cost and schedule.

This report is the seventh in a series of certification reports for the SLF. The subject matter deals with CQA items associated only with the operation of Cell 3 and the installation of an interim cap. Past CQA certification reports for the SLF include the following:

- *Construction Quality Assurance Certification Report for the Secure Landfill Cell No. 1* (CDM, September 1994);
- *Construction Quality Assurance Certification Report for the Secure Landfill Cell No. 2* (CDM, September 1994);
- *Construction Quality Assurance Closure Report for the Secure Landfill Cell No. 1* (CDM, June 1996);
- *Construction Quality Assurance Certification Report for Cell 2A of the Secure Landfill* (CDM, January 7, 2000 revised May 26, 2000);
- *Construction Quality Assurance Closure Report for the Secure Landfill - Cell 2* (CDM, December 21, 2001 revised March 8, 2002); and
- *Construction Quality Assurance Certification Report for Cell 3 of the Secure Landfill* (CDM, June 22, 2005).

Future reports may cover CQA certification of:

- Cell 3 - Reopening and additional operation; interim capping.
- Construction, operation and capping of additional cells or cell expansion if needed.

When completed, the SLF will consist of at least three cells (Cell 1, the expanded Cell 2 and Cell 3) and possibly four (Cell 4).

The material that was placed in Cell 3 is dredged material from the Grasse River. This material consists of sediment, soil and debris removed from the river and waste materials generated during the dredging and dredge materials processing work. Contaminants of concern are polychlorinated biphenyls (PCBs).

Dredging of the Grasse River and the operation and interim capping of Cell 3 were conducted under a program directed by Alcoa designated as the Remedial Options Pilot Study (ROPS) project. Construction Quality Assurance work associated with Cell 3 operations and capping were conducted in association with the ROPS Independent Quality Assurance Team (IQAT) work. Details of the ROPS project are documented in a report titled ROPS Documentation Report.

Design and Construction of the SLF has been in accordance with the RODs issued through the NYSDEC. SLF design/construction efforts have involved the development and submittal of numerous documents to the NYSDEC and United States Environmental Protection Agency (USEPA). These documents included a Final Design Report, Design Drawings, Technical Specifications, Construction Work Plans, Construction Quality Assurance Plans, and reports on borrow sources, soil permeability and material compatibility. The documents are discussed in previous certification reports for Cells 1, 2 and 3 listed above.

In addition to the above documents, the following was developed specifically for Cell 3:

- Design Change Order (DCO) No. 27, submitted May 20, 2004 and approved on July 30, 2004.

DCO No. 27 defined the modifications to the original SLF design documents required to construct Cell 3. It included additions to the Design Drawings and revisions to the Technical Specifications, Construction Work Plan and Construction Quality Assurance Plan. Questions related to the design were covered by DCOs and Design Clarification Forms (DCFs) during construction of Cell 3. These documents are summarized in Table 1-1 and presented in Appendix A. Detailed discussion of these documents is presented in Section 1.5.

Work was performed in calendar year 2005 under three (3) contracts to Alcoa. Operation of Cell 3 and the construction of the interim cap were performed by

Sevenson Environmental Services, Inc. (SES). Mechanical work associated with the leachate transfer system was constructed by Perras Environmental Control Inc. Electrical and instrumentation work associated with the leachate transfer system was constructed by S & L Electric Inc.

1.2 Intent of Document

The intent of this report is to certify that the construction of the components (i.e. interim cover system and storm drainage systems) related to the closure of Cell 3 were carried out in conformance with the SLF Final Design Report (FDR), as amended or modified by DCFs and/or DCOs. Moreover, this document is intended to satisfy the requirements of Section 2.5 of the Construction Quality Assurance Plan (CQAP). That section outlined procedures for the submittal of reports and documentation which would be developed during and following construction. Documentation was in the form of records, including minutes from preconstruction and weekly progress meetings, Construction Quality Assurance Inspector's (CQAI) Inspectors Daily Reports (IDRs), Inspection Data Sheets, Problem Identification and Correction Reports (PICRs), DCOs, DCFs, soils laboratory analysis and data summary sheets, field engineering submittals and project photographs. Because Cell 3 operation and interim capping was conducted as part of the ROPS project, ROPS Form 18 was used for daily inspection reports. Documentation is stored at CDM's Massena, New York, office. DCOs, DCFs and PICRs related to specific construction issues are discussed further in Section 1.4 and in related sections of this report.

Of the above items, the DCOs, DCFs and PICRs were of particular significance in maintaining construction quality. The DCOs and DCFs were used by engineering, the CQAI, the CQAO and SES to clarify Technical Specifications and Design Drawings and to avoid deviation from design intent. The PICRs were issued when the CQAO was of the opinion that issues were significant enough to possibly affect the integrity of the project to warrant formal documentation.

1.3 Record Drawings

Record Drawings with certification by the Engineer of Record accompany this certification report.

1.4 Background Information

The SLF is intended for the disposal of waste from remedial activities at the Alcoa Massena West facility and other waste materials approved by the NYSDEC and USEPA.

The SLF was designed and is being operated in accordance with New York State regulations for hazardous waste landfills (6 New York Codes, Rules and Regulations [NYCRR] Part 373) and the EPA Toxic Substance Control Act (TSCA) as described in 40 Code of Federal Regulations (CFR) Part 761. The design and operation of the SLF are presented in the *Secure Landfill Final Design Report* (CDM, January 1993).

The SLF is located on a till ridge in the southern portion of the Alcoa Massena West property. The location of the SLF is shown in Figure 1-1. The original design provided for three containment cells and a possible fourth containment cell as a contingency.

Construction and lining of Cells 1 and 2 were completed in 1994. Both Cells began receiving waste in 1994. Cell 1 was filled with waste removed during the remediation of Spent Potlining Pile A (PPA), Oily Waste Landfill (OWL) and Dennison Cross Road (DCR) sites. Cell 1 was capped in 1995.

The design capacity of Cell 2 was expanded by three different DCOs.

- The first expansion in capacity resulted from DCO 19 which was submitted on December 1, 1994 and approved on March 30, 1995. DCO 19 provided detail for replacing 3 feet of clay in the primary liner with geosynthetic clay liner (GCL) and modified the final slope and elevations of the waste without changing final grades of the capping system.

- The second expansion in capacity resulted from DCO 25 which was submitted on May 30, 1997 and approved on June 12, 1997. DCO 25 changed the capping system sideslopes from 4H:1V to 3H:1V increasing the capacity by 33,800 yd^3.

- The third expansion in capacity resulted from DCO 26 which was submitted on December 24, 1998 and approved in September 1999. DCO 26 provided for a vertical expansion of Cell 2 within the volume encompassed by the cap of Cell 1 and the designed cap location for Cell 2. This expansion was designated as Cell 2A.

The NYSDEC and the USEPA issued construction approval for the Cell 2 expansion (Cell 2A) in October 1999 and September 1999, respectively. Construction of Cell 2A was substantially completed in November 1999 and the remaining punch list items were completed in the spring of 2000.

The SLF design for all cells includes a double liner system with two leachate collection systems: primary leachate collection system and secondary leachate collection system. Cell 2A also has a double liner system constructed on the east slope of the Cell 1 cap. The Cell 2A primary and secondary leachate collection systems are connected to the Cell 2 primary and secondary leachate collection systems, respectively.

The operation of Cell 2 originally included only the placement of untreated PCB-contaminated material from the Primary Lagoon and Dredge Spoils Area (PLDSA), Oily Waste Landfill (OWL), Dennison Cross Road (DCR), Unnamed Tributary (UNT) and the East Marsh. Eventually, waste materials from other sites were approved for placement in Cell 2 through DCO 24. Operation of Cell 2 (which includes placing waste into the original Cell 2 and the Cell 2A expansion) began on August 15, 1994. Capping of the cell was completed on August 17, 2001.

Construction of Cell 3 required modification to the original SLF design documents. Modifications were made by means of DCO No. 27 issued on May 20, 2004 and approved on July 30, 2004. Cell 3 incorporated the same double liner system components as Cells 1 and 2. The western part of the Cell 3 liner system extends up the eastern slope of Cell 2, and partially overlaps the Cell 2 cap.

Design capacity of Cell 3 defined by the present berm system is approximately 85,000 cubic yards. There is room within the permitted SLF footprint for eastern expansion of Cell 3 or the construction of a Cell 4 to the east of the present limit of Cell 3.

Cell 3 has a separate leachate collection system and transfer pump above the primary liner and a separate leak detection system between the primary and secondary liners. Leachate transfer piping to the Alcoa treatment system in Building 79C is also independent from the transfer piping associated with Cells 1 and 2 though all transfer piping is located in the same piping containment systems and access manholes.

The Cell design presented in DCO 27 incorporated an interim cap consisting of a sand gas venting layer directly on the waste and a white textured 60 mil HDPE geomembrane above the sand. The geomembrane is exposed and is sloped to shed water to the northeast corner of Cell 3. Because the interim cap incorporates a geomembrane without a vegetative cover, it can be readily removed for disposal of approved waste materials in the future.

The eastern berm of Cell 3 is lower in elevation than the other berms and includes a spillway to shed runoff from the geomembrane to the storm drainage system through an inlet outside of the northeast corner of Cell 3. In the future, this berm can be incorporated into a permanent closure of Cell 3 or it can serve as an intermediate berm in an expanded Cell 3.

The Cell 3 liner system work was constructed under three (3) construction contracts with Alcoa. The earthwork and liner system components of Cell 3 were constructed by Envirocon, Inc in the fall of 2004 and the spring of 2005. Mechanical work associated with the leachate transfer system was constructed by Perras Environmental Control Inc. in the spring of 2005. Electrical and instrumentation work associated with the leachate transfer system was constructed by S & L Electric Inc. in the spring of 2005.

Operation and interim capping of Cell 3 was performed by SES in 2005.

SES began operation of Cell 3 on August 8, 2005 after regulatory approval of the Cell 3 liner certification report was received by Alcoa.

1.5 Supplemental Documentation

Construction of Cell 3 required modification to the original SLF design documents. Modifications were made by means of DCO No. 27 issued on May 20, 2004 and approved on July 30, 2004.

A plan showing the location of the SLF at the Alcoa Massena West Plant is shown in Figure 1-1. A plan showing the location of Cell 3 is shown in Figure 1-2.

Questions regarding the design intent which arose following the regulatory approval of DCO No. 27 were answered by issuing DCOs No. 28, 29 and 30; DCFs No. 173 through 182 as presented in Table 1-1.

Discussions of the DCOs and DCFs prior to those issued for construction of Cell 3 were presented in the certification reports listed in Section 1.1.

Problems which developed during operation and capping were addressed by issuing PICRs as summarized below:

- PICR C3-006 addressed an issue that developed during the installation of the northern access ramp over the east berm. During discussion with SES, it was agreed that the ramp would be constructed on August 2, 2005 only on the outside of the cell with the inside portion of the ramp to be completed from the inside of the cell at a later date in accordance with the procedures in DCF 152. During the afternoon of August 2, 2005 the CQA inspector observed that the sand had been placed over the top of the berm to the inside of the cell and a bulldozer was backblading the bottom of the sand to grade. This was due to miscommunication to field crew. Inspection of the liner system surrounding the ramp indicated displacement of geotextile that covered the drainage net over the primary liner and slight displacement of the drainage net in the immediate area of the ramp. No damage was done to the liner system and no repairs were necessary.

- PICR C3-007 addressed an issue associated with welding the Cell 3 cap geomembrane to the east berm. On November 7, 2005, CDM Field Engineering noted that the eastern end of the Cell 3 cap geomembrane had been welded to the primary liner of the Cell 3 liner system over the top of the east berm. Approximately half of the cap was welded at the time the observation was made. DCO 30 specifies that the Cell 3 cap geomembrane be extended over the top of the east berm and welded to the secondary liner, below the seam where the primary liner is sealed to the secondary liner. The CDM Engineer of Record was consulted. He determined that welding to the east berm completed at that time could remain in its present state and that the remaining welds must be done to the secondary liner as specified in DCO 30. This was communicated to the field crews who completed the remaining welds to the secondary liner on the east berm.

Discussions of PICRs issued before the operation and interim capping of Cell 3 were presented in the certification reports listed in Section 1.1.

A copy of each PICR, DCO and DCF issued for Cell 3 operation and interim capping is included in Appendix A. The attachments to DCO 27 (design of Cell 3) and DCO 29 (Operation and Maintenance Manual) are on file at the CDM Massena, New York, office and are not included in Appendix A.

For reporting purposes, construction activities associated with the construction of Cell 3 were divided into work items. The CQAI recorded construction activities in the Inspector's Daily Reports (IDRs). The work items for construction of Cell 3 were:

- Operation (waste solidification (as necessary), hauling, placement, compaction and grading). This is reported in this Section 1.
- Installation of the sand gas venting layer above the waste. This is reported in Section 2.
- Installation of the interim cap. This is reported in Section 2.
- Installation of the gas vents. This is reported in Section 2.

Pursuant with the format of the CQAP, CQA program activities conducted during the construction of Cell 3 are discussed under the following headings in this report:

- Pre-Construction Activities;
- Construction Activities, and
- Post-Construction Activities.

1.6 Operation and Maintenance

The primary and secondary liner systems and the leachate collection systems of Cell 3 are independent of the systems installed in Cells 1 and 2.

Cell 3 has a separate leachate collection system and transfer pump above the primary liner and a separate leak detection system between the primary and secondary liners. Leachate transfer piping to the Alcoa treatment system in Building 79C is also independent from the transfer piping associated with Cells 1 and 2 though all transfer piping is located in the same piping containment systems and access manholes.

Details of Cell 3 operation and maintenance procedures are presented in the Se*cure Landfill Operations and Maintenance Manual* (CDM, December 1998) as revised by DCO No. 29.

Specific items related to Cell 3 are defined in Section 3.2 of this Certification Report.

1.7 Approval to Operate

NYSDEC approved operation of Cell 3 on July 6, 2005. USEPA Region 2 approved operation of Cell 3 on July 29, 2005. Operation of Cell 3 began on August 8, 2005.

1.8 Contaminated Material Placement

SES began operation of the Cell 3 on August 8, 2005 after Alcoa received regulatory approval of the liner system certification report. At that time, the leachate transfer system, which was constructed under another contract, was not ready for automatic operation. DCF 174 permitted waste placement with manual operation of the leachate transfer system.

Materials were transported to Cell 3 in 15 cubic yard capacity dump trucks. Two ramps were constructed on the east berm. Trucks would back up to the top of the berm, remaining on the "clean" side of the ramp, and dump onto the "contaminated" side of the ramp located within the cell. Because the trucks never entered the contaminated zone, full decontamination was not required after dumping. Decontamination of waste materials from the exterior of dump bodies and tailgates was conducted, as necessary, before trucks left the ramp.

Waste was pushed to the required locations within the cell using two bulldozers – a Komatsu D65PX and a Komatsu D65WX. The waste was compacted by the bulldozer tracks.

Waste was initially placed in the cell to conform to the final grading plan in DCO 27, which assumed that 85,000 cubic yards of material would be placed in the cell. When it became apparent that substantially less material would disposed in the cell, the ROPS project team estimated a final volume and CDM Field Engineering prepared a revised grading plan which was presented in DCO 30. This grading plan optimized placement of waste materials from south to north and along the berms to minimize the amount of additional freeze protection required on the sloped surfaces.

The final surveyed waste surface grading is presented in Figure 1-3.

1.8.1 Waste Placement

A control grid consisting of 50 feet x 50 feet subgrids was established by field survey. This grid was used to track initial placement of waste materials and to provide field reference for bearing strength testing.

Load tickets were generated for each truckload of material hauled to Cell 3 for disposal. These tickets documented the source of the waste, the grid ID where the waste was initially placed and the estimated volume. Each load was checked for the presence of free (liquid phase) water; free water was never found.

Waste was generally placed and compacted in 2-foot lifts. A 3-foot lift was allowed for the first lift placed directly onto the liner system or at the transition between the bottom of the cell and sideslopes. Load tickets are on file at the CDM Massena, New York, office.

1.8.2 Bearing Strength

A minimum bearing strength of 16 pounds per square foot, tested at a frequency of 1 test per 20 cubic yards of compacted waste, was specified in the CQAP. The CQAI performed pocket penetrometer tests to confirm bearing strength. A total of 1,585 tests were performed on the 21,700 cubic yards of compacted material. These tests are documented in Appendix B and represent a frequency of 1 test per 13 cubic yards of compacted material.

When it was evident that some waste on the process pad would not meet bearing strength criteria when hauled to Cell 3, the waste was solidified in accordance with DCF 74 using no more than 10 percent quicklime by volume. Solidification was done on the process pad, not in Cell 3. Solidification batch data are summarized in Table 1-2. A copy of DCF 74 is included in Appendix A for reference.

Some waste from the geobags, which had been stabilized with quicklime and also contained waste polymer from the process pad, did not meet required bearing strength in the Cell. This material was bulked by mixing common fill or sand into it within Cell 3 until the required bearing strength was achieved.

1.8.3 Landfilled Waste Volume

Estimated truckload volumes, determined from load tickets completed for each truckload, were used to track approximate waste volumes on a daily basis. The total volume obtained by truckloads, which represents materials placed in Cell 3 before compaction, is 27,240 cubic yards. Of this volume, 24,960 cubic yards is sediment and debris removed from the Grasse River. The remaining volume consists of treatment system residuals and materials brought into the landfill to develop waste bearing strength (bulking materials).

Field survey was used at intervals during waste placement, and after all waste was placed and compacted, to obtain an accurate measurement of compacted volume. The final field survey of waste material in Cell 3 determined that the compacted waste volume is 21,700 cubic yards. Comparison of this volume to the volume based on truckloads indicates a 20.3 percent reduction in volume due to compaction. This is a reasonable volume reduction attributable to compaction. Therefore, the truckload volumes were proportionally adjusted to yield 19,883 cubic yards of sediment and debris removed from the Grasse River, with the remaining volume consisting of treatment system residuals and bulking materials.

The summary of waste material volumes grouped by source, hauled to Cell 3 based on truckload records and final field survey is presented in Table 1-3.

1.9 Construction Personnel and Equipment

In general, construction proceeded on a weather based schedule. Details of actual days worked and staffing levels for the contractors are in the CQA inspector's daily reports. In general, SES maintained the following crew on site during operation:

- 1 construction supervisor;
- 1 general foreman;
- 2 operators;
- 3 truck drivers; and
- Survey subcontractor (Wilhelm, Chatelle and Towne) as required.

During capping, up to three laborers were also employed in addition to the above staffing. In addition Atlantic Lining Company, the liner installation subcontractor to SES, provided a crew during capping.

All work was overseen by an SES construction manager.

Equipment onsite varied. Typically there were 2 bulldozers within the cell to spread and compact waste. There were 3 dump trucks to haul materials from the river and ROPS process pad to Cell 3.

Document ID	Description
DCO 27	Design of Cell 3
DCO 28	Guidance on the location of clay placement and additional details for temporary anchoring of the liner system on the east berm
DCO 29	Addendum to the SLF Operations and Maintenance Manual to incorporate Cell 3 operations
DCO 30	Final grading plan, limits of freeze protection and interim cap details
DCF 173	Restraint of interim cap against wind uplift
DCF 174	Waste disposal during manual operation of the leachate transfer pump
DCF 175	Temporary damming of spillway during waste disposal operations
DCF 176	Stormwater containment during operation
DCF 177	Reconfiguration of electrical conduit on existing leachate transfer manholes (part of electrical upgrade to existing system components)
DCF 178	Substitution of screened gravel for pea gravel in gas vent installation
DCF 179	Cutting and folding existing Cell 3 primary geonet and geotextiles above the 5% slope area to expose the Cell 2 cap
DCF 180	Anchoring details for the Cell 3 cap in the area of the L7 and L8 leachate transfer manholes
DCF 181	Details for installation of the 45-degree elbow and cap on the leachate collection system cleanout riser pipe
DCF 182	Provision for stress relief of Cell 2 cap which stretched when heat was applied during welding of the Cell 3 cap

Table 1-1
SLF Cell 3
Summary of DCOs and DCFs

REAGENT ADDITIONS (as a percent of wet weight of material)											
Date	Batch No.	Quicklime	Hydrated Lime	Cement	Volume of Reagent	Wt. of Reagent (Tons)	Material (cake, debris, sand…)	Volume of Material (cy)	Wet Weight of Matterial (Tons)	Reagent Added (%)	Comments
10/7/05	1	x			12 buckets @ 1.2cy	14.4	Filter Cake	200cy @ 1.5 tons/cy	300	4.8%	Tested pile on pad call test greater than 6 psi
10/25/05	2	x			12 cy	12	cake, debris, sand	300 cy @ 1.5 tons/cy	450	2.7%	Passed 6 psi standard and hauled to landfill on 10/26/2005
10/27/05	3	x			23.66 cy	23.66	Geotube material				
10/27/05	3	x			23.77 cy	23.77	Geotube material				
10/27/05	3	x			23.66 cy	23.77	Geotube material	1,100	1,100	6.5%	There were three deliveries of reagent, therefore weights are summed to calculate % added. Tested on 10/29; did not meet 6psi requirements; retested on 10/31;met the 6psi also demonstrated a 16psi. Allowed to haul to cell. This is considered one batch due to delivery of reagent over 2 days.

Note:
Max allowable percentages allowed by DCF 74: Quicklime = 10%, Hydrated Lime = 40%, Cement = 60%

Table 1-2
SLF Cell 3
Waste Solidification Summary

Uncompacted	
Waste from the Grasse River	
Filter Cake and Sand	12,285
Filter Cake	2,760
Cyclone-Separated Sand	5,745
Geotube Sediment	1,155
Grasse River Debris	3,015
Waste Total	**24,960**
Residuals	
Pad and Containment Residuals	1,410
Pump Containment Area Stone	165
Residuals Total	**1,575**
Bulking	
Common Fill	660
Sand	45
Bulking Total	**705**
Grand Total Based on Truckloads	***27,240***

Compacted	
Waste Volume (cu. yd.) based on Final Field Survey:	
Waste from the River	
Filter Cake and Sand	9,785
Filter Cake	2,199
Cyclone-Separated Sand	4,577
Geotube Sediment	920
Grasse River Debris	2,402
Waste Total	**19,883**
Residuals	
Pad and Containment Residuals	1,124
Pump Containment Area Stone	131
Residuals Total	**1,255**
Bulking	
Common Fill	526
Sand	36
Bulking Total	**562**
Grand Total Based on Final Survey	***21,700***

Notes:
The uncompacted waste volume (cubic yards), by waste type, hauled to Cell 3 was estimated from the truckload records.

Final field survey of waste material in Cell 3 determined that the compacted waste volume is 21,700 cubic yards. Based on these totals, the reduction in volume due to compaction is 20.3 percent. This is a reasonable volume reductuction attributable to compaction. Therefore, the truckload volumes were proportionally adjusted to yield the following in-place compacted volumes.

Table 1-3
SLF Cell 3
Documentation of Waste Volumes

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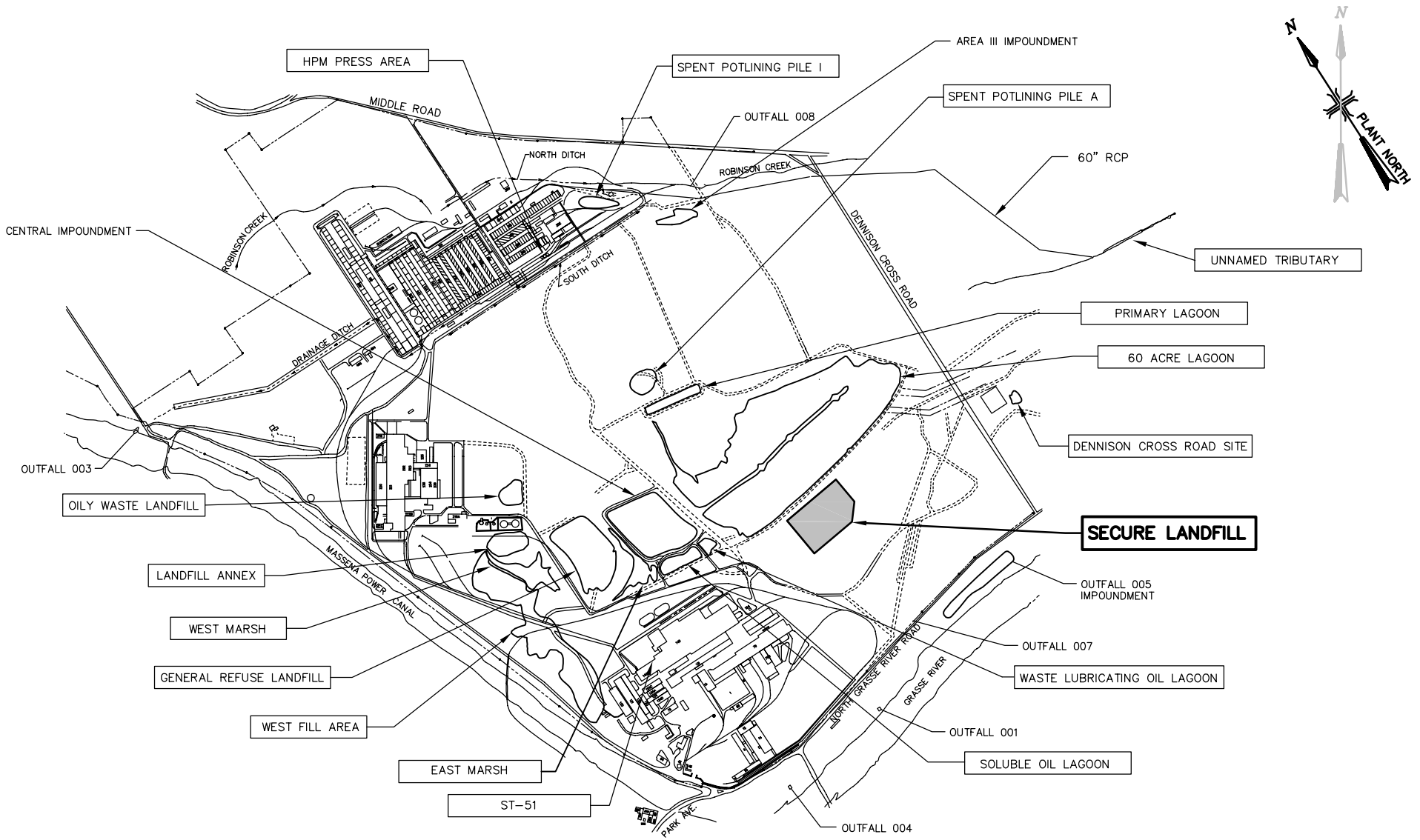

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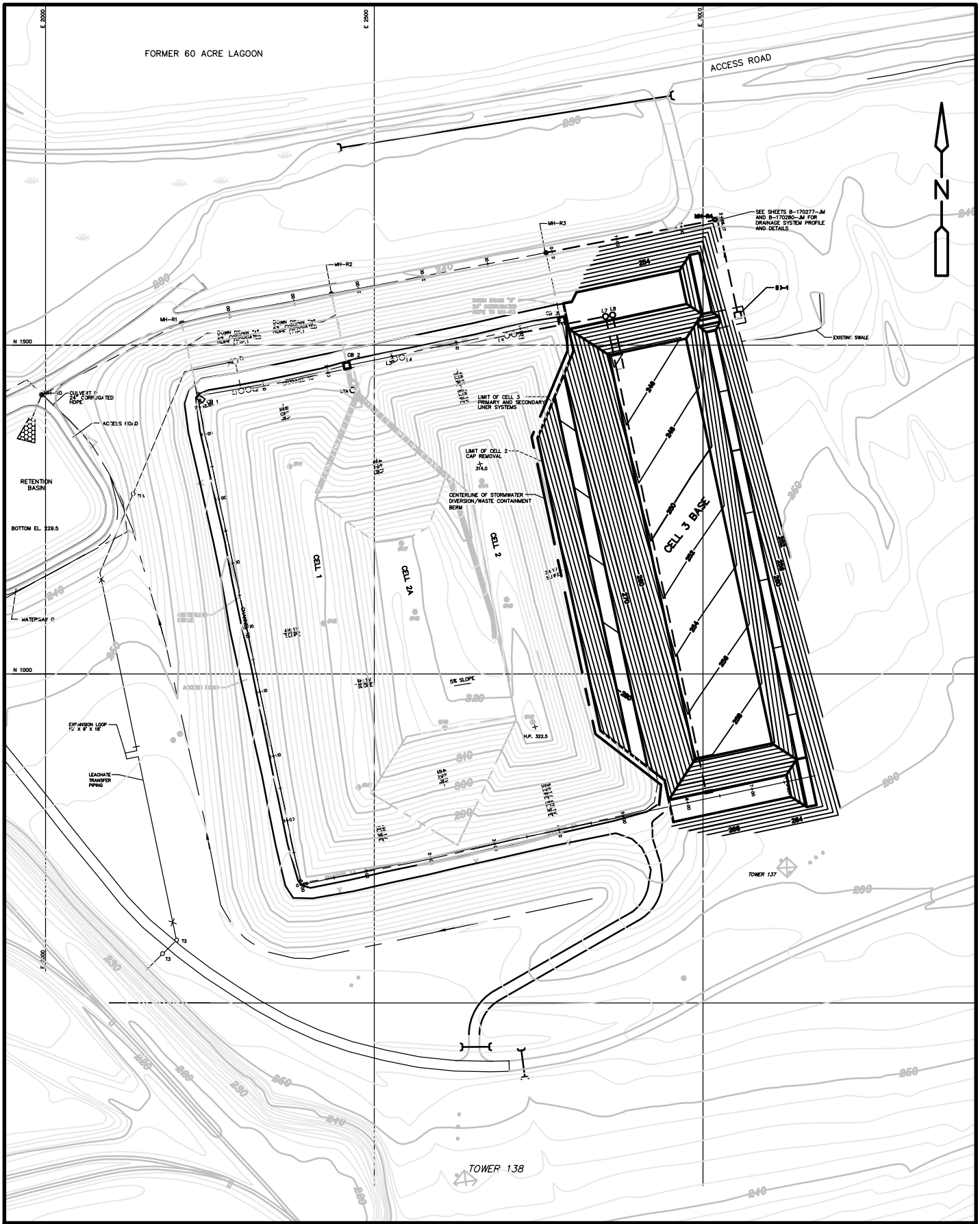
SCALE IN FEET

2000 0 2000 4000

Alcoa Inc. (West Plant) - Massena, New York

SECURE LANDFILL - CELL 3
SITE LOCATION PLAN

FIGURE 1-1



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Alcoa Inc. (West Plant) – Massena, New York

SLF CELL 3 LOCATION PLAN

1" = 200'

100 0 200

FIGURE 1-2

L:\1902\43352\dwg\CQA figs\ LOCATION PLAN 06/17/05 10:39 koskiar

DIVERSION BERM

N

CELL 3

CB 3

L5 L6 L7 L8

LIMIT OF CELL 3 WASTE

STORMWATER SPILLWAY

STORM DRAIN

MH-R4

LEGEND

254 EXISTING GROUND CONTOURS

280 TOP OF WASTE CONTOUR

NOTE: TOP OF WASTE CONTOURS BY WCT SURVEY.

L:\1902\43352\survey\WASTE CONFIG\ FINAL TOP OF WASTE 2005 01/06/06 09:50 koskiar

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1" = 60'

30 0 60

Alcoa Inc. (West Plant) – Massena, New York

CELL 3
TOP OF WASTE CONTOURS

FIGURE 1-3

Section 2
Interim Cover System

2.1 General

The design intent of the interim cover system (ICS) is to provide a low-permeable barrier over the waste material in Cell 3, thus reducing the amount of leachate generated and collected in the cell from precipitation and snow melt. Over time, leachate generation will be minimal because of the barrier.

The interim cover was installed without a vegetative cover to facilitate removal in the future as required to permit additional waste disposal in Cell 3.

A typical cross-section of the ICS is shown on Record Drawing No. B-170306-JM. The ICS components, from the waste surface up, include the following:

- 8-inch minimum depth sand;
- White 60 mil textured high density polyethylene (HDPE) layer;
- Passive gas vents;
- Weights to restrain the HDPE from wind uplift; and
- Hay to provide freeze protection.

Table 2-1 provides a summary of the quality assurance program testing requirements that includes the ICS.

2.2 Preconstruction Activities

Preconstruction activities included acceptance of contaminated material placed as a subgrade for the ICS and its individual components as listed in Section 2.1 and discussed below.

2.2.1 Interim Cover System Subgrade

Contaminated materials generated during the ROPS project were placed in Cell 3 to form the subgrade for the ICS. CQAI tested the bearing strength of the solid waste subgrade directly underlying the ICS with a hand penetrometer, in accordance with Section 4.2.2 of the Secure Landfill Operations and Maintenance Plan. Test results are summarized in Section 1.8.2 and presented in Appendix B.

The CQAI confirmed that the compacted waste material met subgrade requirements before placement of the sand layer. Subgrade requirements include a bearing strength of 16 and 6 psi for non-solidified and solidified material, respectively. Details of waste placement and testing are documented in Section 1.8.

2.2.2 Sand Layer

As part of preconstruction testing for the sand layer, CQAI:

- confirmed approved source (Barrett Paving CDM-5) with Field Engineering and reviewed pre-qualifying test results;
- observed and documented of deliveries;
- confirmed stockpile locations and estimated quantities; and
- collected samples of the sand delivered to the site for grain size analysis and permeability testing.

Pre-qualifying test results are archived with the Field Engineering files under Technical Specifications, Section 02200.

Test results for sand delivered to the site are presented in Table 2-2. The CQAP requires one grain size analysis for every 1,000 cubic yards of material delivered to the site and one set of compaction and permeability tests for every 5,000 cubic yards of material delivered to the site.

As noted in Section 2.3.1, 7,025 cubic yards of sand were eventually used in the sand layer to achieve the final grade necessary for proper drainage of the cap. This is greater that the original estimate of approximately 5,000 cubic yards required for the design minimum layer thickness of 8 inches. The additional quantity was used to achieve the final grading plan defined in DCO 30.

CQAI collected six samples for grain size analysis which is one test less than the seven required by the CQAP based on the final volume. CQAO collected two samples for compaction and permeability testing which meets the requirement of the CQAP. By the time the final volume determined by survey was available, the interim cap had been installed and an additional grain size sample could not be collected.

Test results in Table 2-2 indicate that the six grain size distribution tests are consistent and demonstrate that the sand meets the grain size distribution specified in Technical Specification 02200. The lack of a seventh test does not affect the integrity of the work.

The results of the compaction tests were used in the evaluation of nuclear field moisture-density test results. The results of the permeability tests were not needed in this program because sand was specified in DCO 30 as a substitute for common fill as a bedding layer for the HDPE geomembrane and, as such, did not have to achieve a permeability target.

2.2.3 White Textured 60 mil HDPE Geomembrane

As part of preconstruction activities, the CQAI:

- reviewed documentation from Field Engineering of the manufacturer's QA/QC results and of roll numbers approved for delivery to the site for use on the project;
- reviewed and inspected all welder resumes, welding equipment, etc. as required in the Technical Specification, Section 02273; and
- observed and recorded all roll deliveries on data sheets in the IDRs.

Roll delivery shipping documents have been archived with the project files under the Technical Specification Section 02273. Rolls of geomembrane delivered to the project were checked by the CQAI against the list of rolls approved by the CDM field engineer. CQAI verified that each panel placed in the field originated from an approved roll. A summary of the CQAI's delivery record is provided in Table 2-3.

2.2.4 Passive Gas Vents

The delivery of pipe and appurtenances used for the passive gas vents was documented in IDRs by the CQAI. CQAI confirmed that the materials conformed to the Technical Specifications.

2.2.5 Weights

DCF 173 required the placement of silt curtain anchors used in the ROPS project on the HDPE geomembrane to restrain it from uplift due to wind. Minimum weight and spacing were stipulated.

CQAI reviewed the DCF and examined the weights prior to weight placement.

2.2.6 Hay

Hay was required over those areas of the bottom liner system that had less than 5 feet of cover. Cover is defined as the total thickness of drainage sand, waste and the sand layer.

Before hay was placed, thickness of materials over the bottom liner system based on final survey and the specified hay distribution were examined and agreed to by the CQAI.

2.3 Construction Activities

In general, DCO 30 provided details for grading and installing the interim cap, placement of geotextiles, geosynthetics and geomembranes in the vicinity of the leachate collection or "L" manholes. These manholes are shown in plan view on Record Drawings B-170268-JM and B-170275-JM, et al.

2.3.1 Sand Layer

The sand layer was installed on the compacted solid waste subgrade and below the 60 mil white textured HDPE geomembrane. The sand layer was used to establish a clean

zone over the waste in Cell 3 to eliminate the need for an exclusion zone during geomembrane installation. It also provides a bedding for the geomembrane.

The CQAI inspected and approved the waste subgrade prior to the contractor placing the sand.

The CQAI inspected and recorded the areas of daily sand placement in the IDRs. The CQAI continuously observed that the sand did not contain any deleterious material. The sand layer was installed directly over the graded waste layer. Sufficient sand was placed and compacted to achieve the final grades specified in DCO 30. The volume of sand placed and compacted in the sand layer was 7,025 cubic yards.

Field moisture/density tests were observed and recorded by the CQAI in accordance with the Technical Specifications, Section 02200. CQAI performed six density tests on the sand layer. The tests, all of which indicated the sand met compaction criteria, are documented in Table 2-4. This is one test less than the one test per 1,000 cubic yard required by the CQAP but does not affect the integrity of the work.

Results of field moisture/density testing are presented in Table 2-4.

2.3.2 White Textured 60 mil HDPE Geomembrane

The CQAI inspected the sand layer surface subgrade for smoothness and stability as Geomembrane placement progressed. The Geomembrane panels were inspected for any defects and damage, as they were unrolled.

Field placement locations are shown on Figure 2-1. Table 2-5 is the panel placement log.

The CQAI observed that all seams were welded in accordance with Table 2-10 of the CQAP.

During welding of the Cell 3 geomembrane to the existing Cell 2 cap geomembrane, it was noted that when heat was applied by the extrusion welder, the Cell 2 geomembrane stretched. This was due to the stress accumulated in the Cell 2 geomembrane during its service and during the construction of Cell 3. DCF 182 addressed this issue by allowing the Cell 2 geomembrane to be cut, thereby relieving the stress, and the Cell 3 geomembrane to be fusion welded to the uphill side of the Cell 2 geomembrane. The Cell 3 cap is now fusion welded to the Cell 2 cap. Under the weld is a gap of approximately 3 inches in the Cell 2 geomembrane. This gap must be repaired when Cell 3 is reopened for disposal of additional waste in this area.

Testing was divided into trial seams, destructive and non-destructive categories.

Geomembrane welding was tested by trial seams, destructive testing and non-destructive testing.

Trial Seams

Trial seams were required prior to commencement of liner welding operations. The purpose of observing and recording trial seam results was to assure the adequacy of the welding equipment and that varying weather conditions (i.e., humidity, temperature, etc.) would not affect the quality of the seams. The CQAI observed that the subcontractor implemented the requirements of Table 2-9 of the CQAP.

Trial seams were completed by each technician-welding unit combination at the beginning and middle of each day when seaming operations were performed. Trial seam testing is documented in Table 2-6.

Destructive Testing

Destructive testing involved cutting out seam samples, or coupons from welded/constructed seams for peel and shear testing. The CQAI was responsible for obtaining coupons and testing all seams for peel and shear strength, per Table 2-12 of the CQAP. Destructive test locations are also shown on Figure 2-1, the panel placement plan.

Shear strength involved pulling the sample coupon in a direction perpendicular to the weld. A successful test would result in the liner stretching and breaking adjacent to the weld. This test determined whether or not there was damage to the liner during the welding process. Failure of the weld bond or the liner at less than the specified strength constituted a failed test. Shear strength criteria was established as 90 percent of the tensile strength value of a sample coupon as presented in the Technical Specifications, Section 02273-3.02 (D-13a).

Peel strength testing involved pulling the pieces of HDPE forming the seam at a 180 degree angle. A successful test would result in the liner adjacent to the weld stretching and tearing away from the welded area before weld bond breakage. Failure of the weld bond before adjacent liner failure constituted an unacceptable test. This test determined the actual seam strength.

A total of 11,370 feet of seams were incorporated into the work. A total of 31 destructive tests were performed resulting in a frequency of one test for every 367 feet of seam, which exceeds the most severe minimum requirement established in the CQAP of one test for every 500 feet of seam.

Destructive testing is documented in Table 2-7.

Non-Destructive Testing

Non-destructive testing of seams was accomplished utilizing air pressure on fusion welds and vacuum tests on extrusion welds. The entire length of every weld, including general repairs and repairs at destructive and non-destructive testing locations, were tested using non-destructive methods. The CQAI observed and documented that the requirements of Table 2-11 of the CQAP were implemented.

Non-destructive testing is documented in Table 2-8 (pressure testing of fusion welds) and Table 2-9 (vacuum testing extrusion welds).

2.3.3 Passive Gas Vents

The original Cell 3 design in DCO 27 required the installation of two passive gas vents in Cell 3. Gas vent locations are shown on Record Drawing No. B-170305-JM. The geomembrane was installed around the gas vents in accordance with the gas vent detail on Record Drawing No. B-170306-JM.

DCF 178 specified that geotextile line the hole made in the sand layer and that screened gravel and the vent piping be installed within the lined hole. In the field, the geotextile was wrapped around the gas vent pipe and the screened gravel was placed directly into a hole dug into the sand layer.

2.3.4 Weights

Weights were installed at the locations shown on Record Drawing B-170305-JM.

The weights were decontaminated silt curtain anchors used in the ROPS project. Each anchor weighed 400 to 500 pounds.

A layer of geotextile was placed on the geomembrane before each weight was placed.

2.3.5 Freeze Protection

DCO 30 stipulated the installation of hay to provide freeze protection to prevent freeze-thaw cycles which can result in degradation of clay and geosynthetic clay permeability. Hay was installed in various thicknesses, as shown on Record Drawing B-170305-JM in those areas where at least 5 feet of material (which includes drainage sand, waste and the sand layer above the waste) are not present over the liner system.

2.4 Post-Construction Activities

Normal post-construction activities under the CQA program for SLF are detailed in Table 2-5, Item VI, of the CQAP. They are limited to observation of surface conditions and seed germination periods. There is no vegetative cover over the Cell 3 interim cap however there are seeded areas around the landfill. These areas are being monitored as part of normal SLF operation and maintenance.

Additional post-construction activities associated with Cell 3 include:

- inspection of the storm drainage system and maintenance as necessary to keep the drain inlet clear of debris;
- inspection of the exposed areas of the geomembrane and repairs, as necessary; and
- inspection and maintenance of the freeze protection system.

2.5 Summary

In summary, the operation and installation of the interim capping system for Cell 3 was completed in accordance with the Design Drawings, Technical Specifications, and CQAP for the SLF. Variances from the design, as modified by DCOs and DCFs do not affect the integrity of the completed project.

Work Item	CQAP Section	Related Tech. Spec.	Inspected Items	Inspection Methods	Test Method	Te Frequ
Geosynthetic Liners						
Geomembranes	2.3.5	02273	Material Conformance	Manufacturer Certification		Per Shi
			Thickness	Manufacturer Certification	ASTM D1593	1 per 40
			Specific Gravity	Manufacturer Certification	ASTM D792	1 per 40
			Melt Flow Index	Manufacturer Certification	ASTM D1238	1 per 40
			Carbon Black Content	Manufacturer Certification	ASTM D1603	1 per 40
			Carbon Black Dispersion	Manufacturer Certification	ASTM D3015	1 per 40
			Tensile Properties	Manufacturer Certification	ASTM D638	1 per 40
			Tear Strength	Manufacturer Certification	ASTM D1004	1 per 40
			Bonding Material	Manufacturer Certification		1 per 40
			Bonding Equipment	Manufacturer Certification		1 per 40
			Puncture Resistance	Manufacturer Certification	FTMS 101B	1 per 40
			Low Temperature Brittleness	Manufacturer Certification	ASTM D746	1 per 40
			Dimensional Stability	Manufacturer Certification	ASTM D1204	1 per 40
			Resistance to Soil Burial	Manufacturer Certification	ASTM D3083	1 per 40
			Environmental Stress Crack	Manufacturer Certification	ASTM D1693	1 per 40
			Handling and Storage	Observation		As Rec
			Fingerprint Sample	See 2.3.5 of the CQAPP		As Rec
			Seaming			
			- Bonded Seam Strength	See 2.3.5 of the CQAPP	ASTM D3083	1 per 500 lf
			- Air Testing	See 2.3.5 of the CQAPP		Maximum Ext
			- Vacuum Testing	See 2.3.5 of the CQAPP		Repair
			- Seam Peel Adhesion	See 2.3.5 of the CQAPP	ASTM D413	1 per 500 lf
Granular Soil	2.3.6	02200	Thickness	Observation/Survey		As Rec
			Coverage	Observation		As Rec
			Soil Type			
			- Particle Size Analysis	Grain Size to the No. 200 Sieve	ASTM D422	Every 1,
			- Soil Classification		ASTM D2487	Every 1,
			Moisture Density Relation	Modified Proctor	ASTM D1557	Every 5,
			In-Place Density	Nuclear	ASTM D2922	Every 1,
			In-Place Moisture	Nuclear	ASTM D3017	Every 1,
			Lab Permeability	Flexible Wall	ASTM D5084	Every 5,

Note:
1. Test frequencies noted "As Required" were at the discretion of the CQAO.

Table 2-1
SLF Cell 3
Geosynthetic Liner Quality Assurance Testing Summary

Sample ID	Material	K (cm/sec)	Modified Proctor		Grain Size Analysis Percent Passing (%)									
			Max Dry Density (pcf)	Optimum Moisture Content (%)	1/2 in.	3/8 in.	1/4 in.	#4	#10	#20	#40	#80	#100	#200
CDM Barrett Sand 10.26.05 CQA1	Gas Vent Layer Sand	---	---	---	100	100	96	94	84	67	48	17	12	3.6
CDM Barrett Sand 10.26.05 CQA2	Gas Vent Layer Sand	---	---	---	100	99	97	95	84	66	48	17	12	3.6
CDM Barrett Sand 10.26.05 CQA3	Gas Vent Layer Sand	---	---	---	100	100	97	96	85	67	47	15	11	3.3
CDM Barrett Sand 10.26.05 CQA4	Gas Vent Layer Sand	---	---	---	100	99	96	94	81	64	46	15	11	3.5
CDM Barrett Sand 10.26.05 CQA5	Gas Vent Layer Sand	2.1 x 10-2	118.1	8.6	---	---	---	---	---	---	---	---	---	---
CDM Barrett Sand 10.26.05 CQA6	Gas Vent Layer Sand	---	---	---	100	99	97	95	83	65	46	16	12	4.2
CDM Barrett Sand 10.26.05 CQA7	Gas Vent Layer Sand	---	---	---	100	99	96	94	82	64	46	15	11	3.3
CDM Barrett Sand 10.26.05 CQA8	Gas Vent Layer Sand	2.4 x 10-2	119.5	10.3	---	---	---	---	---	---	---	---	---	---

Table 2-2
SLF Cell 3
Sand Testing Summary

Date	Manufacturer	Product Type	Factory Material Number	Factory Roll Number	SF Dimensions	Manufacturer's Field ID Number	Comments
10/10/05	GSE	60 mil	HD060A010	105126004	7875		White Textured
10/10/05	GSE	60 mil	HD060A010	105126006	11700		White Textured
10/10/05	GSE	60 mil	HD060A010	105126007	11700		White Textured
10/10/05	GSE	60 mil	HD060A010	105126008	11700		White Textured
10/10/05	GSE	60 mil	HD060A010	105126009	11700		White Textured
10/10/05	GSE	60 mil	HD060A010	105126010	11700		White Textured
10/10/05	GSE	60 mil	HD060A010	105126011	11700		White Textured
10/10/05	GSE	60 mil	HD060A010	105126107	11700		White Textured
10/10/05	GSE	60 mil	HD060A010	105126108	11700		White Textured
10/10/05	GSE	60 mil	HD060A010	105126109	11700		White Textured
10/10/05	GSE	60 mil	HD060A010	104117772	6863		White Textured
10/10/05	GSE	60 mil	HD060A010	104117922	6750		White Textured
10/10/05	GSE	60 mil	HD060A010	105111188	9630		White Textured
10/10/05	GSE	60 mil	HD060A010	105112415	6525		White Textured
10/10/05	GSE	60 mil	HD060A010	105113737	6750		White Textured
10/10/05	GSE	60 mil	HD060A010	105116050	11025		White Textured
10/10/05	GSE	60 mil	HD060A010	105116211	9630		White Textured
10/10/05	GSE	60 mil	HD060A010	105116303	9000		White Textured
10/10/05	GSE	60 mil	HD060A010	105116318	8865		White Textured
10/10/05	GSE	60 mil	HD060A010	105117695	7650		White Textured
10/10/05	GSE	60 mil	HD060A010	105118345	11025		White Textured
10/10/05	GSE	60 mil	HD060A010	105125139	10125		White Textured
10/10/05	GSE	60 mil	HD060A010	105126037	9675		White Textured
10/10/05	GSE	60 mil	HD060A010	105126043	7763		White Textured

Table 2-3
SLF Cell 3
Geosynthetic Materials Delivery Log

Date	Test No.	Test Location or Grid No.	Lift No.	Soil Type	Soil Source	Modified Proctor Dry Density (pcf)	Nuclear Dry Density (pcf)	Nuclear Moisture (%)	(%) Modified Proctor Dry Density Achieved	(%) Modif Procto Dry Dens Require
10/19/05	1	D2	1	Sand	Barrett Sand (CDM-5)	119.5	119.9	5.6	100	90
10/19/05	2	C4	1	Sand	Barrett Sand (CDM-5)	119.5	113.9	8.5	95	90
10/19/05	3	A3	1	Sand	Barrett Sand (CDM-5)	119.5	113.5	7.3	95	90
11/11/05	4	L5	1	Sand	Barrett Sand (CDM-5)	119.5	110.2	4.2	92	90
11/11/05	5	M4	1	Sand	Barrett Sand (CDM-5)	119.5	108.2	4.7	91	90
11/11/05	6	K4	1	Sand	Barrett Sand (CDM-5)	119.5	110.1	4.4	92	90

Table 2-4
SLF Cell 3
Troxler Moisture-Density Test Log

Factory Roll Number	In-place Field Panel Number	Date Placed	Comments
105126107	P1	10/20/05	Width 22', Length 134'
105126107	P2	10/20/05	Width 22', Length 135'
105126107	P3	10/20/05	Width 22', length 136'
105126107	P4	10/20/05	Width 22', Length 98'
105126108	P5	10/20/05	Width 22', Length 39'
105126108	P6	10/20/05	Width 22', Length 138'
105126108	P7	10/20/05	Width 22', Length 140'
105126108	P8	10/20/05	Width 22', Length 139.5'
105126108	P9	10/20/05	Width 22', Length 38'
105126006	P10	10/20/05	Width 22', Length 104.25'
105126006	P11	10/20/05	Width 22', Length 142'
105126006	P12	10/20/05	Width 22', Length 140.5'
105126006	P13	10/20/05	Width 22', Length 30'
105126006	P14	10/20/05	Width 22', Length 50'
105126011	P15	10/20/05	Width 22', Length 267'
105126011	P16	10/20/05	Width 22', Length 50'
105126011	P17	10/20/05	Width 22', Length 14.5'
105126006	P18	10/20/05	Width 22', Length 8'
105126006	P19	10/20/05	Width 22.5', Length 6'
105126006	P20	10/21/05	Width 22', Length 173'
105126109	P21	10/21/05	Width 22', Length 91.75'
105126109	P22	10/21/05	Width 22', Length 266'
105126109	P23	10/21/05	Width 22', Length 144'
105126004	P24	10/21/05	Width 22', Length 122.5'
105126004	P25	10/21/05	Width 22', Length 214'
105126010	P26	10/21/05	Width 22', Length 51.5'
105126010	P27	10/21/05	Width 22', Length 265'
105126010	P28	10/21/05	Width 22', Length 181.5'
105126008	P29	10/21/05	Width 22', Length 83.5'
105126008	P30	10/21/05	Width 22', Length 265.5'
105126008	P31	10/21/05	Width 22', Length 153'
104117922	P32	10/21/05	Width 22', Length 111.5'
104117922	P33	10/21/05	Width 22', Length 176.5'

Table 2-5
SLF Cell 3
Panel Placement Sheet

Factory Roll Number	In-place Field Panel Number	Date Placed	Comments
105126007	P34	10/21/05	Width 22', Length 87.5'
105126007	P35	10/21/05	Width 18', Length 265'
105126006	P36	10/21/05	Width 22', Length 2'
105126009	P37	11/12/05	Width 22', Length 272'
105126009	P38	11/12/05	Width 22', Length 236'
105116318	P39	11/12/05	Width 22', Length 38'
105116318	P40	11/12/05	Width 22', Length 225'
105116318	P41	11/21/05	Width 22', Length 71'
104117772	P42	11/21/05	Width 22', Length 258'
104117772	P43	11/21/05	Width 22', Length 86'
105113737	P44	11/21/05	Width 22', Length 190'
105113737	P45	11/21/05	Width 22', Length 103'
105126043	P46	11/21/05	Width 22', Length 175'
105126043	P47	11/21/05	Width 22', Length 157'
105116050	P48	11/21/05	Width 22', Length 121'
105116050	P49	11/21/05	Width 22', Length 179'
105116050	P50	11/21/05	Width 22', Length 82.5'
105111188	P51	11/21/05	Width 22', Length 198'
105111188	P52	11/21/05	Width 22', Length 227'
105126037	P53	11/21/05	Width 22', Length 53'
105126037	P54	11/21/05	Width 22', Length 273'
105126037	P55	11/21/05	Width 22', Length 81.75'
105118345	P56	11/21/05	Width 22', Length 186'
105118345	P57	11/21/05	Width 22', Length 253'
105112415	P58	11/21/05	Width 22', Length 242'
105112415	P59	11/21/05	Width 22', Length 33'
105117695	P60	11/21/05	Width 22', Length 200.5'
105117695	P61	11/21/05	Width 22', Length 126'
105125139	P62	11/13/05	Width 22', Length 106'
105125139	P63	11/13/05	Width 22', Length 35'
105125139	P64	11/13/05	Width 22', Length 36'
105125139	P65	11/13/05	Width 22', Length 33'
105125139	P66	11/13/05	Width 22', Length 36'

Table 2-5
SLF Cell 3
Panel Placement Sheet

Factory Roll Number	In-place Field Panel Number	Date Placed	Comments
105125139	P67	11/13/05	Width 22', Length 38'
105125139	P68	11/13/05	Width 22', Length 39.5'
105125139	P69	11/13/05	Width 22', Length 40'
105125139	P70	11/13/05	Width 22', Length 41'
105116303	P71	11/13/05	Width 22', Length 48'
105116303	P72	11/13/05	Width 22', Length 46'
105116303	P73	11/13/05	Width 22', Length 46.75'
105126007	XP1	11/8/05	Width 3', Length 65'
105126007	XP2	11/8/05	Width 3', Length 64'
105126007	XP3	11/8/05	Width 3', Length 60.5'
105126007	XP4	11/8/05	Width 3', Length 65.75'

Table 2-5
SLF Cell 3
Panel Placement Sheet

Date	Trial Seam Time	Trial Seam Number	Weld Type	Seamer	Unit Number	Unit Temperature	Unit Speed	Trial Peel	Trial Shear	Comments
10/20/05	13:00	1	Fusion	SB	027	800°F	4 FT/MIN	146	226	
10/20/05	13:00	1	Fusion	SB	027	800°F	4 FT/MIN	157	218	
10/20/05	13:00	1	Fusion	SB	027	800°F	4 FT/MIN	144	226	
10/20/05	13:00	1	Fusion	SB	027	800°F	4 FT/MIN	139	225	
10/20/05	13:00	1	Fusion	SB	027	800°F	4 FT/MIN	147	222	
10/20/05	13:00	1	Fusion	SB	027	800°F	4 FT/MIN	130		
10/20/05	13:00	1	Fusion	SB	027	800°F	4 FT/MIN	147		
10/20/05	13:00	1	Fusion	SB	027	800°F	4 FT/MIN	148		
10/20/05	13:00	1	Fusion	SB	027	800°F	4 FT/MIN	148		
10/20/05	13:00	1	Fusion	SB	027	800°F	4 FT/MIN	146		
10/20/05	14:05	2	Fusion	CT	2164	800°F	4 FT/MIN	145	209	
10/20/05	14:05	2	Fusion	CT	2164	800°F	4 FT/MIN	145	212	
10/20/05	14:05	2	Fusion	CT	2164	800°F	4 FT/MIN	169	203	
10/20/05	14:05	2	Fusion	CT	2164	800°F	4 FT/MIN	147	211	
10/20/05	14:05	2	Fusion	CT	2164	800°F	4 FT/MIN	165	200	
10/20/05	14:05	2	Fusion	CT	2164	800°F	4 FT/MIN	149		
10/20/05	14:05	2	Fusion	CT	2164	800°F	4 FT/MIN	151		
10/20/05	14:05	2	Fusion	CT	2164	800°F	4 FT/MIN	146		
10/20/05	14:05	2	Fusion	CT	2164	800°F	4 FT/MIN	146		
10/20/05	14:05	2	Fusion	CT	2164	800°F	4 FT/MIN	140		
10/20/05	14:45	3	Fusion	CI	2316	800°F	4 FT/MIN	146	213	
10/20/05	14:45	3	Fusion	CI	2316	800°F	4 FT/MIN	151	209	
10/20/05	14:45	3	Fusion	CI	2316	800°F	4 FT/MIN	148	213	
10/20/05	14:45	3	Fusion	CI	2316	800°F	4 FT/MIN	149	203	
10/20/05	14:45	3	Fusion	CI	2316	800°F	4 FT/MIN	142	199	
10/20/05	14:45	3	Fusion	CI	2316	800°F	4 FT/MIN	148		
10/20/05	14:45	3	Fusion	CI	2316	800°F	4 FT/MIN	147		
10/20/05	14:45	3	Fusion	CI	2316	800°F	4 FT/MIN	148		
10/20/05	14:45	3	Fusion	CI	2316	800°F	4 FT/MIN	144		
10/20/05	14:45	3	Fusion	CI	2316	800°F	4 FT/MIN	150		

Table 2-6
SLF Cell 3
60 mil HDPE Geomembrane Trial Seam Log

Date	Trial Seam Time	Trial Seam Number	Weld Type	Seamer	Unit Number	Unit Temperature	Unit Speed	Trial Peel	Trial Shear	Comments
10/21/05	9:00	4	Fusion	SB	027	800°F	4 FT/MIN	139	205	
10/21/05	9:00	4	Fusion	SB	027	800°F	4 FT/MIN	142	221	
10/21/05	9:00	4	Fusion	SB	027	800°F	4 FT/MIN	148	205	
10/21/05	9:00	4	Fusion	SB	027	800°F	4 FT/MIN	146	206	
10/21/05	9:00	4	Fusion	SB	027	800°F	4 FT/MIN	147	208	
10/21/05	9:00	4	Fusion	SB	027	800°F	4 FT/MIN	152		
10/21/05	9:00	4	Fusion	SB	027	800°F	4 FT/MIN	160		
10/21/05	9:00	4	Fusion	SB	027	800°F	4 FT/MIN	169		
10/21/05	9:00	4	Fusion	SB	027	800°F	4 FT/MIN	160		
10/21/05	9:00	4	Fusion	SB	027	800°F	4 FT/MIN	157		
10/21/05	13:00	5	Fusion	SB	027	800°F	5 FT/MIN	157	196	
10/21/05	13:00	5	Fusion	SB	027	800°F	5 FT/MIN	148	199	
10/21/05	13:00	5	Fusion	SB	027	800°F	5 FT/MIN	149	197	
10/21/05	13:00	5	Fusion	SB	027	800°F	5 FT/MIN	146	203	
10/21/05	13:00	5	Fusion	SB	027	800°F	5 FT/MIN	151	197	
10/21/05	13:00	5	Fusion	SB	027	800°F	5 FT/MIN	154		
10/21/05	13:00	5	Fusion	SB	027	800°F	5 FT/MIN	147		
10/21/05	13:00	5	Fusion	SB	027	800°F	5 FT/MIN	146		
10/21/05	13:00	5	Fusion	SB	027	800°F	5 FT/MIN	148		
10/21/05	13:00	5	Fusion	SB	027	800°F	5 FT/MIN	151		
10/21/05	13:30	6	Fusion	CT	2164	800°F	4 FT/MIN	165	196	
10/21/05	13:30	6	Fusion	CT	2164	800°F	4 FT/MIN	141	195	
10/21/05	13:30	6	Fusion	CT	2164	800°F	4 FT/MIN	161	184	
10/21/05	13:30	6	Fusion	CT	2164	800°F	4 FT/MIN	145	197	
10/21/05	13:30	6	Fusion	CT	2164	800°F	4 FT/MIN	165	203	
10/21/05	13:30	6	Fusion	CT	2164	800°F	4 FT/MIN	149		
10/21/05	13:30	6	Fusion	CT	2164	800°F	4 FT/MIN	149		
10/21/05	13:30	6	Fusion	CT	2164	800°F	4 FT/MIN	145		
10/21/05	13:30	6	Fusion	CT	2164	800°F	4 FT/MIN	157		
10/21/05	13:30	6	Fusion	CT	2164	800°F	4 FT/MIN	167		

Table 2-6
SLF Cell 3
60 mil HDPE Geomembrane Trial Seam Log

Date	Trial Seam Time	Trial Seam Number	Weld Type	Seamer	Unit Number	Unit Temperature	Unit Speed	Trial Peel	Trial Shear	Comments
10/21/05	14:00	7	Fusion	CI	2316	800°F	4 FT/MIN	143	198	
10/21/05	14:00	7	Fusion	CI	2316	800°F	4 FT/MIN	144	202	
10/21/05	14:00	7	Fusion	CI	2316	800°F	4 FT/MIN	145	193	
10/21/05	14:00	7	Fusion	CI	2316	800°F	4 FT/MIN	142	203	
10/21/05	14:00	7	Fusion	CI	2316	800°F	4 FT/MIN	151	193	
10/21/05	14:00	7	Fusion	CI	2316	800°F	4 FT/MIN	145		
10/21/05	14:00	7	Fusion	CI	2316	800°F	4 FT/MIN	146		
10/21/05	14:00	7	Fusion	CI	2316	800°F	4 FT/MIN	151		
10/21/05	14:00	7	Fusion	CI	2316	800°F	4 FT/MIN	150		
10/21/05	14:00	7	Fusion	CI	2316	800°F	4 FT/MIN	147		
10/22/05	8:00	8	Extrusion	CI	207	550 Heat	420 Preheat	135	195	
10/22/05	8:00	8	Extrusion	CI	207	550 Heat	420 Preheat	139	219	
10/22/05	8:00	8	Extrusion	CI	207	550 Heat	420 Preheat	142	218	
10/22/05	8:00	8	Extrusion	CI	207	550 Heat	420 Preheat	143	201	
10/22/05	8:00	8	Extrusion	CI	207	550 Heat	420 Preheat	137	203	
10/22/05	13:00	8	Extrusion	CI	207	550 Heat	420 Preheat	147	211	
10/22/05	13:00	8	Extrusion	CI	207	550 Heat	420 Preheat	144	209	
10/22/05	13:00	8	Extrusion	CI	207	550 Heat	420 Preheat	140	217	
10/22/05	13:00	8	Extrusion	CI	207	550 Heat	420 Preheat	139	212	
10/22/05	13:00	8	Extrusion	CI	207	550 Heat	420 Preheat	142	209	
11/3/05	8:45	9	Extrusion	CI	207	550 Heat	450 Preheat	85	188	
11/3/05	8:45	9	Extrusion	CI	207	550 Heat	450 Preheat	85	187	
11/3/05	8:45	9	Extrusion	CI	207	550 Heat	450 Preheat	95	187	
11/3/05	8:45	9	Extrusion	CI	207	550 Heat	450 Preheat	99	186	
11/3/05	8:45	9	Extrusion	CI	207	550 Heat	450 Preheat	96	186	
11/3/05	13:10	10	Extrusion	CI	207	550 Heat	400 Preheat	99	174	
11/3/05	13:10	10	Extrusion	CI	207	550 Heat	400 Preheat	97	181	
11/3/05	13:10	10	Extrusion	CI	207	550 Heat	400 Preheat	94	184	
11/3/05	13:10	10	Extrusion	CI	207	550 Heat	400 Preheat	100	178	
11/3/05	13:10	10	Extrusion	CI	207	550 Heat	400 Preheat	99	176	

Table 2-6
SLF Cell 3
60 mil HDPE Geomembrane Trial Seam Log

Date	Trial Seam Time	Trial Seam Number	Weld Type	Seamer	Unit Number	Unit Temperature	Unit Speed	Trial Peel	Trial Shear	Comments
11/4/05	8:00	11	Extrusion	CI	101	550 Heat	400 Preheat	133	201	
11/4/05	8:00	11	Extrusion	CI	101	550 Heat	400 Preheat	158	204	
11/4/05	8:00	11	Extrusion	CI	101	550 Heat	400 Preheat	166	203	
11/4/05	8:00	11	Extrusion	CI	101	550 Heat	400 Preheat	160	206	
11/4/05	8:00	11	Extrusion	CI	101	550 Heat	400 Preheat	150	211	
11/4/05	13:00	12	Extrusion	CI	101	550 Heat	400 Preheat	134	221	
11/4/05	13:00	12	Extrusion	CI	101	550 Heat	400 Preheat	164	205	
11/4/05	13:00	12	Extrusion	CI	101	550 Heat	400 Preheat	156	215	
11/4/05	13:00	12	Extrusion	CI	101	550 Heat	400 Preheat	169	207	
11/4/05	13:00	12	Extrusion	CI	101	550 Heat	400 Preheat	170	205	
11/7/05	8:10	13	Extrusion	CI	101	525 Heat	375 Preheat	134	204	
11/7/05	8:10	13	Extrusion	CI	101	525 Heat	375 Preheat	155	198	
11/7/05	8:10	13	Extrusion	CI	101	525 Heat	375 Preheat	144	199	
11/7/05	8:10	13	Extrusion	CI	101	525 Heat	375 Preheat	141	191	
11/7/05	8:10	13	Extrusion	CI	101	525 Heat	375 Preheat	142	197	
11/7/05	11:00	14	Extrusion	CI	101	575 Heat	375 Preheat	131	168	
11/7/05	11:00	14	Extrusion	CI	101	575 Heat	375 Preheat	105	182	
11/7/05	11:00	14	Extrusion	CI	101	575 Heat	375 Preheat	109	190	
11/7/05	11:00	14	Extrusion	CI	101	575 Heat	375 Preheat	120	186	
11/7/05	11:00	14	Extrusion	CI	101	575 Heat	375 Preheat	109	190	
11/8/05	9:00	15	Fusion	CI	2316	510°F	3.5 FT/MIN	140	206	
11/8/05	9:00	15	Fusion	CI	2316	510°F	3.5 FT/MIN	133	206	
11/8/05	9:00	15	Fusion	CI	2316	510°F	3.5 FT/MIN	147	209	
11/8/05	9:00	15	Fusion	CI	2316	510°F	3.5 FT/MIN	133	204	
11/8/05	9:00	15	Fusion	CI	2316	510°F	3.5 FT/MIN	138	201	
11/8/05	9:00	15	Fusion	CI	2316	510°F	3.5 FT/MIN	134		
11/8/05	9:00	15	Fusion	CI	2316	510°F	3.5 FT/MIN	148		
11/8/05	9:00	15	Fusion	CI	2316	510°F	3.5 FT/MIN	134		
11/8/05	9:00	15	Fusion	CI	2316	510°F	3.5 FT/MIN	146		
11/8/05	9:00	15	Fusion	CI	2316	510°F	3.5 FT/MIN	136		

Table 2-6
SLF Cell 3
60 mil HDPE Geomembrane Trial Seam Log

Date	Trial Seam Time	Trial Seam Number	Weld Type	Seamer	Unit Number	Unit Temperature	Unit Speed	Trial Peel	Trial Shear	Comments
11/8/05	12:50	16	Fusion	CI	2316	510°F	3.5 FT/MIN	143	202	
11/8/05	12:50	16	Fusion	CI	2316	510°F	3.5 FT/MIN	139	209	
11/8/05	12:50	16	Fusion	CI	2316	510°F	3.5 FT/MIN	148	205	
11/8/05	12:50	16	Fusion	CI	2316	510°F	3.5 FT/MIN	145	202	
11/8/05	12:50	16	Fusion	CI	2316	510°F	3.5 FT/MIN	139	209	
11/8/05	12:50	16	Fusion	CI	2316	510°F	3.5 FT/MIN	136		
11/8/05	12:50	16	Fusion	CI	2316	510°F	3.5 FT/MIN	144		
11/8/05	12:50	16	Fusion	CI	2316	510°F	3.5 FT/MIN	152		
11/8/05	12:50	16	Fusion	CI	2316	510°F	3.5 FT/MIN	140		
11/8/05	12:50	16	Fusion	CI	2316	510°F	3.5 FT/MIN	136		
11/9/05	8:00	17	Extrusion	CI	101	540 Heat	380 Preheat	96	216	
11/9/05	8:00	17	Extrusion	CI	101	540 Heat	380 Preheat	96	218	
11/9/05	8:00	17	Extrusion	CI	101	540 Heat	380 Preheat	160	224	
11/9/05	8:00	17	Extrusion	CI	101	540 Heat	380 Preheat	146	214	
11/9/05	8:00	17	Extrusion	CI	101	540 Heat	380 Preheat	168	221	
11/11/05	7:45	18	Extrusion	KB	101	500 Heat	400 Preheat	125	221	
11/11/05	7:45	18	Extrusion	KB	101	500 Heat	400 Preheat	99	206	
11/11/05	7:45	18	Extrusion	KB	101	500 Heat	400 Preheat	135	229	
11/11/05	7:45	18	Extrusion	KB	101	500 Heat	400 Preheat	113	214	
11/11/05	7:45	18	Extrusion	KB	101	500 Heat	400 Preheat	110	206	
11/12/05	8:42	19	Fusion	KB	2333	775°F	4 FT/MIN	133	218	
11/12/05	8:42	19	Fusion	KB	2333	775°F	4 FT/MIN	151	229	
11/12/05	8:42	19	Fusion	KB	2333	775°F	4 FT/MIN	167	223	
11/12/05	8:42	19	Fusion	KB	2333	775°F	4 FT/MIN	168	229	
11/12/05	8:42	19	Fusion	KB	2333	775°F	4 FT/MIN	160	208	
11/12/05	8:42	19	Fusion	KB	2333	775°F	4 FT/MIN	156		
11/12/05	8:42	19	Fusion	KB	2333	775°F	4 FT/MIN	167		
11/12/05	8:42	19	Fusion	KB	2333	775°F	4 FT/MIN	158		
11/12/05	8:42	19	Fusion	KB	2333	775°F	4 FT/MIN	157		
11/12/05	8:42	19	Fusion	KB	2333	775°F	4 FT/MIN	141		

Table 2-6
SLF Cell 3
60 mil HDPE Geomembrane Trial Seam Log

Date	Trial Seam Time	Trial Seam Number	Weld Type	Seamer	Unit Number	Unit Temperature	Unit Speed	Trial Peel	Trial Shear	Comments
11/12/05	8:58	20	Fusion	GL	027	800°F	3 FT/MIN	146	227	
11/12/05	8:58	20	Fusion	GL	027	800°F	3 FT/MIN	155	241	
11/12/05	8:58	20	Fusion	GL	027	800°F	3 FT/MIN	151	225	
11/12/05	8:58	20	Fusion	GL	027	800°F	3 FT/MIN	140	231	
11/12/05	8:58	20	Fusion	GL	027	800°F	3 FT/MIN	155	228	
11/12/05	8:58	20	Fusion	GL	027	800°F	3 FT/MIN	152		
11/12/05	8:58	20	Fusion	GL	027	800°F	3 FT/MIN	149		
11/12/05	8:58	20	Fusion	GL	027	800°F	3 FT/MIN	187		
11/12/05	8:58	20	Fusion	GL	027	800°F	3 FT/MIN	157		
11/12/05	8:58	20	Fusion	GL	027	800°F	3 FT/MIN	191		
11/12/05	9:00	21	Fusion	CI	2316	800°F	4 FT/MIN	147	227	
11/12/05	9:00	21	Fusion	CI	2316	800°F	4 FT/MIN	152	226	
11/12/05	9:00	21	Fusion	CI	2316	800°F	4 FT/MIN	142	227	
11/12/05	9:00	21	Fusion	CI	2316	800°F	4 FT/MIN	144	205	
11/12/05	9:00	21	Fusion	CI	2316	800°F	4 FT/MIN	149	227	
11/12/05	9:00	21	Fusion	CI	2316	800°F	4 FT/MIN	150		
11/12/05	9:00	21	Fusion	CI	2316	800°F	4 FT/MIN	154		
11/12/05	9:00	21	Fusion	CI	2316	800°F	4 FT/MIN	148		
11/12/05	9:00	21	Fusion	CI	2316	800°F	4 FT/MIN	154		
11/12/05	9:00	21	Fusion	CI	2316	800°F	4 FT/MIN	146		
11/12/05	13:00	22	Fusion	KB	2333	775°F	4 FT/MIN	135	200	
11/12/05	13:00	22	Fusion	KB	2333	775°F	4 FT/MIN	145	219	
11/12/05	13:00	22	Fusion	KB	2333	775°F	4 FT/MIN	145	208	
11/12/05	13:00	22	Fusion	KB	2333	775°F	4 FT/MIN	155	212	
11/12/05	13:00	22	Fusion	KB	2333	775°F	4 FT/MIN	165	212	
11/12/05	13:00	22	Fusion	KB	2333	775°F	4 FT/MIN	150		
11/12/05	13:00	22	Fusion	KB	2333	775°F	4 FT/MIN	146		
11/12/05	13:00	22	Fusion	KB	2333	775°F	4 FT/MIN	151		
11/12/05	13:00	22	Fusion	KB	2333	775°F	4 FT/MIN	154		
11/12/05	13:00	22	Fusion	KB	2333	775°F	4 FT/MIN	150		

Table 2-6
SLF Cell 3
60 mil HDPE Geomembrane Trial Seam Log

Date	Trial Seam Time	Trial Seam Number	Weld Type	Seamer	Unit Number	Unit Temperature	Unit Speed	Trial Peel	Trial Shear	Comments
11/12/05	13:40	23	Fusion	CI	2316	800°F	4 FT/MIN	132	188	
11/12/05	13:40	23	Fusion	CI	2316	800°F	4 FT/MIN	142	202	
11/12/05	13:40	23	Fusion	CI	2316	800°F	4 FT/MIN	139	214	
11/12/05	13:40	23	Fusion	CI	2316	800°F	4 FT/MIN	123	206	
11/12/05	13:40	23	Fusion	CI	2316	800°F	4 FT/MIN	134	230	
11/12/05	13:40	23	Fusion	CI	2316	800°F	4 FT/MIN	134		
11/12/05	13:40	23	Fusion	CI	2316	800°F	4 FT/MIN	139		
11/12/05	13:40	23	Fusion	CI	2316	800°F	4 FT/MIN	127		
11/12/05	13:40	23	Fusion	CI	2316	800°F	4 FT/MIN	143		
11/12/05	13:40	23	Fusion	CI	2316	800°F	4 FT/MIN	123		
11/12/05	16:20	24	Fusion	GL	027	800°F	4 FT/MIN	139	209	
11/12/05	16:20	24	Fusion	GL	027	800°F	4 FT/MIN	128	205	
11/12/05	16:20	24	Fusion	GL	027	800°F	4 FT/MIN	127	180	
11/12/05	16:20	24	Fusion	GL	027	800°F	4 FT/MIN	130	199	
11/12/05	16:20	24	Fusion	GL	027	800°F	4 FT/MIN	132	202	
11/12/05	16:20	24	Fusion	GL	027	800°F	4 FT/MIN	131		
11/12/05	16:20	24	Fusion	GL	027	800°F	4 FT/MIN	129		
11/12/05	16:20	24	Fusion	GL	027	800°F	4 FT/MIN	131		
11/12/05	16:20	24	Fusion	GL	027	800°F	4 FT/MIN	132		
11/12/05	16:20	24	Fusion	GL	027	800°F	4 FT/MIN	139		
11/13/05	7:30	25	Fusion	KB	2333	775°F	4 FT/MIN	128	196	
11/13/05	7:30	25	Fusion	KB	2333	775°F	4 FT/MIN	123	198	
11/13/05	7:30	25	Fusion	KB	2333	775°F	4 FT/MIN	141	200	
11/13/05	7:30	25	Fusion	KB	2333	775°F	4 FT/MIN	148	213	
11/13/05	7:30	25	Fusion	KB	2333	775°F	4 FT/MIN	153	215	
11/13/05	7:30	25	Fusion	KB	2333	775°F	4 FT/MIN	156		
11/13/05	7:30	25	Fusion	KB	2333	775°F	4 FT/MIN	129		
11/13/05	7:30	25	Fusion	KB	2333	775°F	4 FT/MIN	135		
11/13/05	7:30	25	Fusion	KB	2333	775°F	4 FT/MIN	147		
11/13/05	7:30	25	Fusion	KB	2333	775°F	4 FT/MIN	145		

Table 2-6
SLF Cell 3
60 mil HDPE Geomembrane Trial Seam Log

Date	Trial Seam Time	Trial Seam Number	Weld Type	Seamer	Unit Number	Unit Temperature	Unit Speed	Trial Peel	Trial Shear	Comments
11/13/05	7:50	26	Fusion	GL	2316	780°F	3.5 FT/MIN	131	196	
11/13/05	7:50	26	Fusion	GL	2316	780°F	3.5 FT/MIN	137	185	
11/13/05	7:50	26	Fusion	GL	2316	780°F	3.5 FT/MIN	144	196	
11/13/05	7:50	26	Fusion	GL	2316	780°F	3.5 FT/MIN	146	192	
11/13/05	7:50	26	Fusion	GL	2316	780°F	3.5 FT/MIN	139	192	
11/13/05	7:50	26	Fusion	GL	2316	780°F	3.5 FT/MIN	136		
11/13/05	7:50	26	Fusion	GL	2316	780°F	3.5 FT/MIN	146		
11/13/05	7:50	26	Fusion	GL	2316	780°F	3.5 FT/MIN	135		
11/13/05	7:50	26	Fusion	GL	2316	780°F	3.5 FT/MIN	136		
11/13/05	7:50	26	Fusion	GL	2316	780°F	3.5 FT/MIN	134		
11/13/05	8:50	27	Fusion	CI	027	780°F	3.5 FT/MIN	125	196	
11/13/05	8:50	27	Fusion	CI	027	780°F	3.5 FT/MIN	133	181	
11/13/05	8:50	27	Fusion	CI	027	780°F	3.5 FT/MIN	150	187	
11/13/05	8:50	27	Fusion	CI	027	780°F	3.5 FT/MIN	138	184	
11/13/05	8:50	27	Fusion	CI	027	780°F	3.5 FT/MIN	144	199	
11/13/05	8:50	27	Fusion	CI	027	780°F	3.5 FT/MIN	142		
11/13/05	8:50	27	Fusion	CI	027	780°F	3.5 FT/MIN	141		
11/13/05	8:50	27	Fusion	CI	027	780°F	3.5 FT/MIN	138		
11/13/05	8:50	27	Fusion	CI	027	780°F	3.5 FT/MIN	140		
11/13/05	8:50	27	Fusion	CI	027	780°F	3.5 FT/MIN	151		
11/13/05	13:00	28	Fusion	KB	2333	775°F	4 FT/MIN	122	189	
11/13/05	13:00	28	Fusion	KB	2333	775°F	4 FT/MIN	141	188	
11/13/05	13:00	28	Fusion	KB	2333	775°F	4 FT/MIN	132	172	
11/13/05	13:00	28	Fusion	KB	2333	775°F	4 FT/MIN	138	181	
11/13/05	13:00	28	Fusion	KB	2333	775°F	4 FT/MIN	135	190	
11/13/05	13:00	28	Fusion	KB	2333	775°F	4 FT/MIN	139		
11/13/05	13:00	28	Fusion	KB	2333	775°F	4 FT/MIN	136		
11/13/05	13:00	28	Fusion	KB	2333	775°F	4 FT/MIN	154		
11/13/05	13:00	28	Fusion	KB	2333	775°F	4 FT/MIN	135		
11/13/05	13:00	28	Fusion	KB	2333	775°F	4 FT/MIN	147		

Table 2-6
SLF Cell 3
60 mil HDPE Geomembrane Trial Seam Log

Date	Trial Seam Time	Trial Seam Number	Weld Type	Seamer	Unit Number	Unit Temperature	Unit Speed	Trial Peel	Trial Shear	Comments
11/13/05	13:05	29	Fusion	GL	2316	780°F	3.5 FT/MIN	131	192	
11/13/05	13:05	29	Fusion	GL	2316	780°F	3.5 FT/MIN	142	169	
11/13/05	13:05	29	Fusion	GL	2316	780°F	3.5 FT/MIN	133	174	
11/13/05	13:05	29	Fusion	GL	2316	780°F	3.5 FT/MIN	148	184	
11/13/05	13:05	29	Fusion	GL	2316	780°F	3.5 FT/MIN	151	184	
11/13/05	13:05	29	Fusion	GL	2316	780°F	3.5 FT/MIN	138		
11/13/05	13:05	29	Fusion	GL	2316	780°F	3.5 FT/MIN	194		
11/13/05	13:05	29	Fusion	GL	2316	780°F	3.5 FT/MIN	142		
11/13/05	13:05	29	Fusion	GL	2316	780°F	3.5 FT/MIN	142		
11/13/05	13:05	29	Fusion	GL	2316	780°F	3.5 FT/MIN	147		
11/14/05	8:00	30	Extrusion	CI	101	500 Heat	400 Preheat	122	195	
11/14/05	8:00	30	Extrusion	CI	101	500 Heat	400 Preheat	129	208	
11/14/05	8:00	30	Extrusion	CI	101	500 Heat	400 Preheat	130	201	
11/14/05	8:00	30	Extrusion	CI	101	500 Heat	400 Preheat	121	205	
11/14/05	8:00	30	Extrusion	CI	101	500 Heat	400 Preheat	131	205	
11/14/05	13:30	31	Extrusion	CI	101	500 Heat	400 Preheat	135	201	
11/14/05	13:30	31	Extrusion	CI	101	500 Heat	400 Preheat	130	199	
11/14/05	13:30	31	Extrusion	CI	101	500 Heat	400 Preheat	131	200	
11/14/05	13:30	31	Extrusion	CI	101	500 Heat	400 Preheat	129	203	
11/14/05	13:30	31	Extrusion	CI	101	500 Heat	400 Preheat	135	203	
11/14/05	14:30	32	Extrusion	KB	206	500 Heat	360 Preheat	128	201	
11/14/05	14:30	32	Extrusion	KB	206	500 Heat	360 Preheat	130	212	
11/14/05	14:30	32	Extrusion	KB	206	500 Heat	360 Preheat	124	218	
11/14/05	14:30	32	Extrusion	KB	206	500 Heat	360 Preheat	135	200	
11/14/05	14:30	32	Extrusion	KB	206	500 Heat	360 Preheat	141	201	
11/16/05	7:40	33	Extrusion	CI	101	500 Heat	300 Preheat	136	213	
11/16/05	7:40	33	Extrusion	CI	101	500 Heat	300 Preheat	120	209	
11/16/05	7:40	33	Extrusion	CI	101	500 Heat	300 Preheat	143	205	
11/16/05	7:40	33	Extrusion	CI	101	500 Heat	300 Preheat	153	213	
11/16/05	7:40	33	Extrusion	CI	101	500 Heat	300 Preheat	152	198	

Table 2-6
SLF Cell 3
60 mil HDPE Geomembrane Trial Seam Log

Date	Trial Seam Time	Trial Seam Number	Weld Type	Seamer	Unit Number	Unit Temperature	Unit Speed	Trial Peel	Trial Shear	Comments
11/17/05	8:30	34	Extrusion	CI	101	530 Heat	430 Preheat	134	212	
11/17/05	8:30	34	Extrusion	CI	101	530 Heat	430 Preheat	149	205	
11/17/05	8:30	34	Extrusion	CI	101	530 Heat	430 Preheat	141	214	
11/17/05	8:30	34	Extrusion	CI	101	530 Heat	430 Preheat	138	209	
11/17/05	8:30	34	Extrusion	CI	101	530 Heat	430 Preheat	137	211	
11/17/05	12:45	35	Extrusion	CI	101	530 Heat	430 Preheat	158	213	
11/17/05	12:45	35	Extrusion	CI	101	530 Heat	430 Preheat	143	209	
11/17/05	12:45	35	Extrusion	CI	101	530 Heat	430 Preheat	149	211	
11/17/05	12:45	35	Extrusion	CI	101	530 Heat	430 Preheat	148	216	
11/17/05	12:45	35	Extrusion	CI	101	530 Heat	430 Preheat	130	209	
11/18/05	8:00	36	Extrusion	CI	101	530 Heat	430 Preheat	121	187	
11/18/05	8:00	36	Extrusion	CI	101	530 Heat	430 Preheat	129	191	
11/18/05	8:00	36	Extrusion	CI	101	530 Heat	430 Preheat	125	190	
11/18/05	8:00	36	Extrusion	CI	101	530 Heat	430 Preheat	127	189	
11/18/05	8:00	36	Extrusion	CI	101	530 Heat	430 Preheat	125	187	

Table 2-6
SLF Cell 3
60 mil HDPE Geomembrane Trial Seam Log

Test Date	Install Date	Sample I.D. Number	Sample Location	Test Results		Seamer & Unit	Comments
				Peel	Shear		
10/21/05	10/20/05	DS-1	P3/P4	159	214	CT 2164	
10/21/05	10/20/05	DS-1	P3/P4	155	266	CT 2164	
10/21/05	10/20/05	DS-1	P3/P4	161	215	CT 2164	
10/21/05	10/20/05	DS-1	P3/P4	160	209	CT 2164	
10/21/05	10/20/05	DS-1	P3/P4	158	216	CT 2164	
10/21/05	10/20/05	DS-2	P7/P6	163	212	SB 027	
10/21/05	10/20/05	DS-2	P7/P6	168	254	SB 027	
10/21/05	10/20/05	DS-2	P7/P6	151	231	SB 027	
10/21/05	10/20/05	DS-2	P7/P6	162	217	SB 027	
10/21/05	10/20/05	DS-2	P7/P6	170	210	SB 027	
10/21/05	10/20/05	DS-3	P8/P10	162	257	CI 2316	
10/21/05	10/20/05	DS-3	P8/P10	158	258	CI 2316	
10/21/05	10/20/05	DS-3	P8/P10	169	253	CI 2316	
10/21/05	10/20/05	DS-3	P8/P10	154	228	CI 2316	
10/21/05	10/20/05	DS-3	P8/P10	168	232	CI 2316	
10/21/05	10/20/05	DS-4	P9/P11	156	200	CT 2164	
10/21/05	10/20/05	DS-4	P9/P11	173	221	CT 2164	
10/21/05	10/20/05	DS-4	P9/P11	168	218	CT 2164	
10/21/05	10/20/05	DS-4	P9/P11	160	230	CT 2164	
10/21/05	10/20/05	DS-4	P9/P11	174	243	CT 2164	
10/21/05	10/20/05	DS-5	P4/P15	161	214	SB 027	
10/21/05	10/20/05	DS-5	P4/P15	167	238	SB 027	
10/21/05	10/20/05	DS-5	P4/P15	176	257	SB 027	
10/21/05	10/20/05	DS-5	P4/P15	172	218	SB 027	
10/21/05	10/20/05	DS-5	P4/P15	163	222	SB 027	

Test Date	Install Date	Sample I.D. Number	Sample Location	Test Results		Seamer & Unit	Comments
				Peel	Shear		
10/22/05	10/21/05	DS-6	P15/P21	130	172	SB 027	
10/22/05	10/21/05	DS-6	P15/P21	142	181	SB 027	
10/22/05	10/21/05	DS-6	P15/P21	137	179	SB 027	
10/22/05	10/21/05	DS-6	P15/P21	135	190	SB 027	
10/22/05	10/21/05	DS-6	P15/P21	146	185	SB 027	
10/22/05	10/21/05	DS-7	P21/P22	138	171	SB 027	
10/22/05	10/21/05	DS-7	P21/P22	143	174	SB 027	
10/22/05	10/21/05	DS-7	P21/P22	150	189	SB 027	
10/22/05	10/21/05	DS-7	P21/P22	148	186	SB 027	
10/22/05	10/21/05	DS-7	P21/P22	136	192	SB 027	
10/22/05	10/21/05	DS-8	P22/P24	137	172	SB 027	
10/22/05	10/21/05	DS-8	P22/P24	162	184	SB 027	
10/22/05	10/21/05	DS-8	P22/P24	135	188	SB 027	
10/22/05	10/21/05	DS-8	P22/P24	129	185	SB 027	
10/22/05	10/21/05	DS-8	P22/P24	120	189	SB 027	
10/22/05	10/21/05	DS-9	P24/P25	131	179	CT 2164	
10/22/05	10/21/05	DS-9	P24/P25	156	178	CT 2164	
10/22/05	10/21/05	DS-9	P24/P25	140	171	CT 2164	
10/22/05	10/21/05	DS-9	P24/P25	144	180	CT 2164	
10/22/05	10/21/05	DS-9	P24/P25	126	177	CT 2164	
10/22/05	10/21/05	DS-10	P25/P26	132	186	CI 2316	
10/22/05	10/21/05	DS-10	P25/P26	134	194	CI 2316	
10/22/05	10/21/05	DS-10	P25/P26	140	175	CI 2316	
10/22/05	10/21/05	DS-10	P25/P26	143	199	CI 2316	
10/22/05	10/21/05	DS-10	P25/P26	137	193	CI 2316	

Test Date	Install Date	Sample I.D. Number	Sample Location	Test Results		Seamer & Unit	Comments
				Peel	Shear		
10/22/05	10/21/05	DS-11	P26/P27	138	216	CI 2316	
10/22/05	10/21/05	DS-11	P26/P27	137	193	CI 2316	
10/22/05	10/21/05	DS-11	P26/P27	146	190	CI 2316	
10/22/05	10/21/05	DS-11	P26/P27	142	219	CI 2316	
10/22/05	10/21/05	DS-11	P26/P27	151	221	CI 2316	
11/14/05	11/12/05	DS-12	P37/P38	174	181	KB 2333	
11/14/05	11/12/05	DS-12	P37/P38	151	181	KB 2333	
11/14/05	11/12/05	DS-12	P37/P38	148	189	KB 2333	
11/14/05	11/12/05	DS-12	P37/P38	155	187	KB 2333	
11/14/05	11/12/05	DS-12	P37/P38	145	188	KB 2333	
11/14/05	11/12/05	DS-13	P40/P42	130	180	CI 2316	
11/14/05	11/12/05	DS-13	P40/P42	135	176	CI 2316	
11/14/05	11/12/05	DS-13	P40/P42	141	181	CI 2316	
11/14/05	11/12/05	DS-13	P40/P42	127	190	CI 2316	
11/14/05	11/12/05	DS-13	P40/P42	127	192	CI 2316	
11/14/05	11/12/05	DS-13	P40/P42	132		CI 2316	
11/14/05	11/12/05	DS-13	P40/P42	151		CI 2316	
11/14/05	11/12/05	DS-13	P40/P42	123		CI 2316	
11/14/05	11/12/05	DS-13	P40/P42	133		CI 2316	
11/14/05	11/12/05	DS-13	P40/P42	146		CI 2316	
11/14/05	11/12/05	DS-14	P39/P40	136	178	GL 027	
11/14/05	11/12/05	DS-14	P39/P40	128	180	GL 027	
11/14/05	11/12/05	DS-14	P39/P40	149	183	GL 027	
11/14/05	11/12/05	DS-14	P39/P40	132	190	GL 027	
11/14/05	11/12/05	DS-14	P39/P40	135	189	GL 027	
11/14/05	11/12/05	DS-14	P39/P40	136		GL 027	
11/14/05	11/12/05	DS-14	P39/P40	138		GL 027	
11/14/05	11/12/05	DS-14	P39/P40	129		GL 027	

Test Date	Install Date	Sample I.D. Number	Sample Location	Test Results		Seamer & Unit	Comments
				Peel	Shear		
11/14/05	11/12/05	DS-14	P39/P40	141		GL 027	
11/14/05	11/12/05	DS-14	P39/P40	137		GL 027	
11/14/05	11/12/05	DS-15	P43/P45	130	198	KB 2333	
11/14/05	11/12/05	DS-15	P43/P45	148	205	KB 2333	
11/14/05	11/12/05	DS-15	P43/P45	144	186	KB 2333	
11/14/05	11/12/05	DS-15	P43/P45	138	190	KB 2333	
11/14/05	11/12/05	DS-15	P43/P45	136	192	KB 2333	
11/14/05	11/12/05	DS-15	P43/P45	141		KB 2333	
11/14/05	11/12/05	DS-15	P43/P45	152		KB 2333	
11/14/05	11/12/05	DS-15	P43/P45	133		KB 2333	
11/14/05	11/12/05	DS-15	P43/P45	149		KB 2333	
11/14/05	11/12/05	DS-15	P43/P45	141		KB 2333	
11/15/05	11/12/05	DS-16	P45/P47	163	203	CI 2316	
11/15/05	11/12/05	DS-16	P45/P47	147	201	CI 2316	
11/15/05	11/12/05	DS-16	P45/P47	151	198	CI 2316	
11/15/05	11/12/05	DS-16	P45/P47	139	187	CI 2316	
11/15/05	11/12/05	DS-16	P45/P47	193	199	CI 2316	
11/15/05	11/12/05	DS-16	P45/P47	145		CI 2316	
11/15/05	11/12/05	DS-16	P45/P47	160		CI 2316	
11/15/05	11/12/05	DS-16	P45/P47	152		CI 2316	
11/15/05	11/12/05	DS-16	P45/P47	136		CI 2316	
11/15/05	11/12/05	DS-16	P45/P47	140		CI 2316	
11/15/05	11/12/05	DS-17	P47/P49	151	196	KB 2333	
11/15/05	11/12/05	DS-17	P47/P49	148	200	KB 2333	
11/15/05	11/12/05	DS-17	P47/P49	135	196	KB 2333	
11/15/05	11/12/05	DS-17	P47/P49	143	189	KB 2333	
11/15/05	11/12/05	DS-17	P47/P49	144	191	KB 2333	
11/15/05	11/12/05	DS-17	P47/P49	142		KB 2333	

Test Date	Install Date	Sample I.D. Number	Sample Location	Test Results		Seamer & Unit	Comments
				Peel	Shear		
11/15/05	11/12/05	DS-17	P47/P49	163		KB 2333	
11/15/05	11/12/05	DS-17	P47/P49	133		KB 2333	
11/15/05	11/12/05	DS-17	P47/P49	161		KB 2333	
11/15/05	11/12/05	DS-17	P47/P49	159		KB 2333	
11/15/05	11/12/05	DS-18	P48/P49	146	178	KB 2333	
11/15/05	11/12/05	DS-18	P48/P49	155	186	KB 2333	
11/15/05	11/12/05	DS-18	P48/P49	143	190	KB 2333	
11/15/05	11/12/05	DS-18	P48/P49	145	183	KB 2333	
11/15/05	11/12/05	DS-18	P48/P49	156	180	KB 2333	
11/15/05	11/12/05	DS-18	P48/P49	159		KB 2333	
11/15/05	11/12/05	DS-18	P48/P49	162		KB 2333	
11/15/05	11/12/05	DS-18	P48/P49	158		KB 2333	
11/15/05	11/12/05	DS-18	P48/P49	140		KB 2333	
11/15/05	11/12/05	DS-18	P48/P49	142		KB 2333	
11/14/05	11/13/05	DS-19	E79/P38	139	183	CI 027	
11/14/05	11/13/05	DS-19	E79/P38	143	180	CI 027	
11/14/05	11/13/05	DS-19	E79/P38	140	184	CI 027	
11/14/05	11/13/05	DS-19	E79/P38	138	182	CI 027	
11/14/05	11/13/05	DS-19	E79/P38	144	175	CI 027	
11/14/05	11/13/05	DS-19	E79/P38	144		CI 027	
11/14/05	11/13/05	DS-19	E79/P38	138		CI 027	
11/14/05	11/13/05	DS-19	E79/P38	143		CI 027	
11/14/05	11/13/05	DS-19	E79/P38	127		CI 027	
11/14/05	11/13/05	DS-19	E79/P38	128		CI 027	
11/15/05	11/12/05	DS-20	P38/P40	147	184	GL 027	
11/15/05	11/12/05	DS-20	P38/P40	154	193	GL 027	
11/15/05	11/12/05	DS-20	P38/P40	159	198	GL 027	
11/15/05	11/12/05	DS-20	P38/P40	149	201	GL 027	

Table 2-7
SLF Cell 3
Destructive Sample Logs

Test Date	Install Date	Sample I.D. Number	Sample Location	Test Results		Seamer & Unit	Comments
				Peel	Shear		
11/15/05	11/12/05	DS-20	P38/P40	146	183	GL 027	
11/15/05	11/12/05	DS-20	P38/P40	151		GL 027	
11/15/05	11/12/05	DS-20	P38/P40	155		GL 027	
11/15/05	11/12/05	DS-20	P38/P40	143		GL 027	
11/15/05	11/12/05	DS-20	P38/P40	140		GL 027	
11/15/05	11/12/05	DS-20	P38/P40	152		GL 027	
11/15/05	11/13/05	DS-21	P51/P52	162	192	CI 2316	
11/15/05	11/13/05	DS-21	P51/P52	160	203	CI 2316	
11/15/05	11/13/05	DS-21	P51/P52	158	199	CI 2316	
11/15/05	11/13/05	DS-21	P51/P52	163	187	CI 2316	
11/15/05	11/13/05	DS-21	P51/P52	147	195	CI 2316	
11/15/05	11/13/05	DS-21	P51/P52	153		CI 2316	
11/15/05	11/13/05	DS-21	P51/P52	160		CI 2316	
11/15/05	11/13/05	DS-21	P51/P52	156		CI 2316	
11/15/05	11/13/05	DS-21	P51/P52	145		CI 2316	
11/15/05	11/13/05	DS-21	P51/P52	147		CI 2316	
11/15/05	11/13/05	DS-22	P51/P53	143	192	CI 2316	
11/15/05	11/13/05	DS-22	P51/P53	147	190	CI 2316	
11/15/05	11/13/05	DS-22	P51/P53	130	197	CI 2316	
11/15/05	11/13/05	DS-22	P51/P53	145	186	CI 2316	
11/15/05	11/13/05	DS-22	P51/P53	156	194	CI 2316	
11/15/05	11/13/05	DS-22	P51/P53	160		CI 2316	
11/15/05	11/13/05	DS-22	P51/P53	137		CI 2316	
11/15/05	11/13/05	DS-22	P51/P53	142		CI 2316	
11/15/05	11/13/05	DS-22	P51/P53	146		CI 2316	
11/15/05	11/13/05	DS-22	P51/P53	139		CI 2316	
11/14/05	11/13/05	DS-23	P60/P62	138	188	GL 2316	
11/14/05	11/13/05	DS-23	P60/P62	148	188	GL 2316	

Table 2-7
SLF Cell 3
Destructive Sample Logs

Test Date	Install Date	Sample I.D. Number	Sample Location	Test Results		Seamer & Unit	Comments
				Peel	Shear		
11/14/05	11/13/05	DS-23	P60/P62	141	168	GL 2316	
11/14/05	11/13/05	DS-23	P60/P62	129	179	GL 2316	
11/14/05	11/13/05	DS-23	P60/P62	154	182	GL 2316	
11/14/05	11/13/05	DS-23	P60/P62	136		GL 2316	
11/14/05	11/13/05	DS-23	P60/P62	142		GL 2316	
11/14/05	11/13/05	DS-23	P60/P62	131		GL 2316	
11/14/05	11/13/05	DS-23	P60/P62	136		GL 2316	
11/14/05	11/13/05	DS-23	P60/P62	132		GL 2316	
11/14/05	11/13/05	DS-24	P61/P62	142	191	GL 2316	
11/14/05	11/13/05	DS-24	P61/P62	156	203	GL 2316	
11/14/05	11/13/05	DS-24	P61/P62	147	198	GL 2316	
11/14/05	11/13/05	DS-24	P61/P62	150	191	GL 2316	
11/14/05	11/13/05	DS-24	P61/P62	163	186	GL 2316	
11/14/05	11/13/05	DS-24	P61/P62	147		GL 2316	
11/14/05	11/13/05	DS-24	P61/P62	125		GL 2316	
11/14/05	11/13/05	DS-24	P61/P62	147		GL 2316	
11/14/05	11/13/05	DS-24	P61/P62	148		GL 2316	
11/14/05	11/13/05	DS-24	P61/P62	147		GL 2316	
11/14/05	11/14/05	DS-25	P68/P69	126	197	KB 2333	
11/14/05	11/14/05	DS-25	P68/P69	154	188	KB 2333	
11/14/05	11/14/05	DS-25	P68/P69	143	192	KB 2333	
11/14/05	11/14/05	DS-25	P68/P69	156	190	KB 2333	
11/14/05	11/14/05	DS-25	P68/P69	144	191	KB 2333	
11/14/05	11/14/05	DS-25	P68/P69	153		KB 2333	
11/14/05	11/14/05	DS-25	P68/P69	132		KB 2333	
11/14/05	11/14/05	DS-25	P68/P69	146		KB 2333	
11/14/05	11/14/05	DS-25	P68/P69	144		KB 2333	
11/14/05	11/14/05	DS-25	P68/P69	151		KB 2333	

Table 2-7
SLF Cell 3
Destructive Sample Logs

Test Date	Install Date	Sample I.D. Number	Sample Location	Test Results		Seamer & Unit	Comments
				Peel	Shear		
11/14/05	11/14/05	DS-26	P69/P70	139	203	KB 2333	
11/14/05	11/14/05	DS-26	P69/P70	151	199	KB 2333	
11/14/05	11/14/05	DS-26	P69/P70	148	202	KB 2333	
11/14/05	11/14/05	DS-26	P69/P70	143	196	KB 2333	
11/14/05	11/14/05	DS-26	P69/P70	146	196	KB 2333	
11/14/05	11/14/05	DS-26	P69/P70	145		KB 2333	
11/14/05	11/14/05	DS-26	P69/P70	135		KB 2333	
11/14/05	11/14/05	DS-26	P69/P70	147		KB 2333	
11/14/05	11/14/05	DS-26	P69/P70	134		KB 2333	
11/14/05	11/14/05	DS-26	P69/P70	140		KB 2333	
11/16/05		DS-27	P34/E Tie	27		CI 101	Fail - DS-27A and B taken
11/16/05		DS-27	P34/E Tie	131		CI 101	to delimit failed section
11/16/05		DS-27	P34/E Tie	112		CI 101	
11/16/05		DS-27	P34/E Tie	46		CI 101	
11/16/05		DS-27	P34/E Tie	19		CI 101	
11/16/05	11/14/05	DS-28	P48/E Tie	9		CI 101	Fail - DS-28A, B, AA and BB
11/16/05	11/14/05	DS-28	P48/E Tie	27		CI 101	taken to delimit failed section
11/16/05	11/14/05	DS-28	P48/E Tie			CI 101	
11/16/05	11/14/05	DS-28	P48/E Tie			CI 101	
11/16/05	11/14/05	DS-28	P48/E Tie			CI 101	
11/16/05		DS-27A	P32/E Tie	94	183	CI 101	
11/16/05		DS-27A	P32/E Tie	100	190	CI 101	
11/16/05		DS-27A	P32/E Tie	108	185	CI 101	
11/16/05		DS-27A	P32/E Tie	110	182	CI 101	
11/16/05		DS-27A	P32/E Tie	113	188	CI 101	
11/16/05	11/16/05	DS-28A	P46/E Tie	22		CI 101	
11/16/05	11/16/05	DS-28A	P46/E Tie	9		CI 101	

Table 2-7
SLF Cell 3
Destructive Sample Logs

Test Date	Install Date	Sample I.D. Number	Sample Location	Test Results		Seamer & Unit	Comments
				Peel	Shear		
11/16/05	11/16/05	DS-28A	P46/E Tie			CI 101	
11/16/05	11/16/05	DS-28A	P46/E Tie			CI 101	
11/16/05	11/16/05	DS-28A	P46/E Tie			CI 101	
11/16/05	11/14/05	DS-28B	P48/E Tie	47		CI 101	
11/16/05	11/14/05	DS-28B	P48/E Tie	50		CI 101	
11/16/05	11/14/05	DS-28B	P48/E Tie	26		CI 101	
11/16/05	11/14/05	DS-28B	P48/E Tie			CI 101	
11/16/05	11/14/05	DS-28B	P48/E Tie			CI 101	
11/17/05	11/16/05	DS-27B	P35/E Tie	91	179	CI 101	
11/17/05	11/16/05	DS-27B	P35/E Tie	128	188	CI 101	
11/17/05	11/16/05	DS-27B	P35/E Tie	124	200	CI 101	
11/17/05	11/16/05	DS-27B	P35/E Tie	130	202	CI 101	
11/17/05	11/16/05	DS-27B	P35/E Tie	117	196	CI 101	
11/17/05	11/7/05	DS-29	P1/E Tie	99	204	KB 101	
11/17/05	11/7/05	DS-29	P1/E Tie	92	195	KB 101	
11/17/05	11/7/05	DS-29	P1/E Tie	129	188	KB 101	
11/17/05	11/7/05	DS-29	P1/E Tie	117	187	KB 101	
11/17/05	11/7/05	DS-29	P1/E Tie	94	194	KB 101	
11/17/05		DS-28BB	P49/E Tie	101	170	CI 101	
11/17/05		DS-28BB	P49/E Tie	103	185	CI 101	
11/17/05		DS-28BB	P49/E Tie	121	184	CI 101	
11/17/05		DS-28BB	P49/E Tie	105	195	CI 101	
11/17/05		DS-28BB	P49/E Tie	123	180	CI 101	
11/17/05	11/16/05	DS-28AA	P44/E Tie	112	191	CI 101	
11/17/05	11/16/05	DS-28AA	P44/E Tie	130	188	CI 101	
11/17/05	11/16/05	DS-28AA	P44/E Tie	159	182	CI 101	

Table 2-7
SLF Cell 3
Destructive Sample Logs

Test Date	Install Date	Sample I.D. Number	Sample Location	Test Results		Seamer & Unit	Comments
				Peel	Shear		
11/17/05	11/16/05	DS-28AA	P44/E Tie	123	176	CI 101	
11/17/05	11/16/05	DS-28AA	P44/E Tie	142	173	CI 101	
11/17/05	11/17/05	DS-30	P60/E Tie	125	195	CI 101	
11/17/05	11/17/05	DS-30	P60/E Tie	131	191	CI 101	
11/17/05	11/17/05	DS-30	P60/E Tie	150	198	CI 101	
11/17/05	11/17/05	DS-30	P60/E Tie	142	190	CI 101	
11/17/05	11/17/05	DS-30	P60/E Tie	128	194	CI 101	
11/8/05	11/8/05	XEP-DS-1	XP1/P30	141	183	CI 2316	
11/8/05	11/8/05	XEP-DS-1	XP1/P30	138	172	CI 2316	
11/8/05	11/8/05	XEP-DS-1	XP1/P30	134	188	CI 2316	
11/8/05	11/8/05	XEP-DS-1	XP1/P30	136	178	CI 2316	
11/8/05	11/8/05	XEP-DS-1	XP1/P30	133	202	CI 2316	
11/8/05	11/8/05	XEP-DS-1	XP1/P30	133		CI 2316	
11/8/05	11/8/05	XEP-DS-1	XP1/P30	137		CI 2316	
11/8/05	11/8/05	XEP-DS-1	XP1/P30	148		CI 2316	
11/8/05	11/8/05	XEP-DS-1	XP1/P30	141		CI 2316	
11/8/05	11/8/05	XEP-DS-1	XP1/P30	145		CI 2316	

Date/Time	Seam Location	Weld Type	Welder	Unit #	Weld Temp & Speed	Seam Length	Overlap	Air Test Result	Air Test Tech.	Comments
10/20/05	P11/P12	Fusion	CI	2316	800x4	142.5'	6"	Pass	CH	
10/20/05	P8/P10	Fusion	CI	2316	800x4	104'	6"	Pass	CH	
10/20/05	P8/P9	Fusion	CI	2316	800x4	38'	6"	Pass	CH	
10/20/05	P9/P10	Fusion	CI	2316	800x4	22'	6"	Pass	CH	
10/20/05	P10/P11	Fusion	CT	2164	800x4	104.5'	6"	Pass	CH	
10/20/05	P3/P4	Fusion	CT	2164	800x4	98'	6"	Pass	CH	
10/20/05	P3/P5	Fusion	CT	2164	800x4	39'	6"	Pass	CH	
10/20/05	P4/P5	Fusion	CT	2164	800x4	22'	6"	Pass	CH	
10/20/05	P4/P6	Fusion	CT	2164	800x4	98'	6"	Pass	CH	
10/20/05	P5/P6	Fusion	CT	2164	800x4	39'	6"	Pass	CH	
10/20/05	P9/P11	Fusion	CT	2164	800x4	38'	6"	Pass	CH	
10/20/05	P1/P2	Fusion	SB	027	800x4	135'	6"	Pass	CH	
10/20/05	P2/P3	Fusion	SB	027	800x4	137'	6"	Pass	CH	
10/20/05	P6/P7	Fusion	SB	027	800x4	139.5'	6"	Pass	CH	
10/20/05	P7/P8	Fusion	SB	027	800x4	140.5'	6"	Pass	CH	
10/21/05	P12/P16	Fusion	CI	2316	800x4	22'	6"	Pass	CH	
10/21/05	P12/P19	Fusion	CI	207	800x4	26'	6"	Pass	CH	
10/21/05	P13/P16	Fusion	CI	2316	800x4	39'	6"	Pass	CH	
10/21/05	P14/P16	Fusion	CI	2316	800x4	51'	6"	Pass	CH	
10/21/05	P18/P19	Fusion	CI	207	800x4	6'	6"	Pass	CH	
10/21/05	P25/P26	Fusion	CI	2316	800x4	22'	6"	Pass	CH	
10/21/05	P26/P27	Fusion	CI	2316	800x4	51'	6"	Pass	CH	
10/21/05	P11/P15	Fusion	CT	2164	800x4	22'	6"	Pass	CH	
10/21/05	P12/P14	Fusion	CT	2164	800x4	22'	6"	Pass	CH	
10/21/05	P12/P15	Fusion	CT	2164	800x4	22'	6"	Pass	CH	
10/21/05	P12/P17	Fusion	CT	2164	800x4	22'	6"	Pass	CH	
10/21/05	P12/P18	Fusion	CT	2164	800x4	22'	6"	Pass	CH	

Notes:

HDPE Roll number corresponds with first panel listed under Seam Location.

"East Tie #" refers to weld made to east berm; "E#" are existing panels on the Cell 2 cap

Table 2-8

SLF Cell 3

60 mil HDPE Geomembrane Field Seaming Log

Date/Time	Seam Location	Weld Type	Welder	Unit #	Weld Temp & Speed	Seam Length	Overlap	Air Test Result	Air Test Tech.	Comments
10/21/05	P13/P17	Fusion	CT	2164	800x4	23'	6"	Pass	CH	
10/21/05	P14/P15	Fusion	CT	2164	800x4	51'	6"	Pass	CH	
10/21/05	P17/P18	Fusion	CT	2164	800x4	6'	6"	Pass	CH	
10/21/05	P23/P25	Fusion	CT	2164	800x4	144'	6"	Pass	CH	
10/21/05	P24/P25	Fusion	CT	2164	800x4	70'	6"	Pass	CH	
10/21/05	P24/P26	Fusion	CT	2164	800x4	52'	6"	Pass	CH	
10/21/05	P9/P15	Fusion	CT	2164	800x4	22'	6"	Pass	CH	
10/21/05	P1/P15	Fusion	SB	027	800x4	22'	6"	Pass	CH	
10/21/05	P12/P13	Fusion	SB	027	800x4	22'	6"	Pass	CH	
10/21/05	P15/P20	Fusion	SB	027	800x4	173'	6"	Pass	CH	
10/21/05	P15/P21	Fusion	SB	027	800x4	91.5	6"	Pass	CH	
10/21/05	P15/P36	Fusion	SB	027	800x4	3'	6"	Pass	CH	
10/21/05	P2/P15	Fusion	SB	027	800x4	22'	6"	Pass	CH	
10/21/05	P20/P21	Fusion	SB	027	800x4	22'	6"	Pass	CH	
10/21/05	P20/P22	Fusion	SB	027	800x4	173'	6"	Pass	CH	
10/21/05	P21/P22	Fusion	SB	027	800x4	92'	6"	Pass	CH	
10/21/05	P21/P36	Fusion	SB	027	800x4	22'	6"	Pass	CH	
10/21/05	P22/P23	Fusion	SB	027	800x4	144'	6"	Pass	CH	
10/21/05	P22/P24	Fusion	SB	027	800x4	123'	6"	Pass	CH	
10/21/05	P22/P36	Fusion	SB	027	800x4	2'	6"	Pass	CH	
10/21/05	P23/P24	Fusion	SB	027	800x4	22'	6"	Pass	CH	
10/21/05	P3/P15	Fusion	SB	027	800x4	22'	6"	Pass	CH	
10/21/05	P4/P15	Fusion	SB	027	800x4	22'	6"	Pass	CH	
10/21/05	P6/P15	Fusion	SB	027	800x4	22'	6"	Pass	CH	
10/21/05	P7/P15	Fusion	SB	027	800x4	22'	6"	Pass	CH	
10/21/05	P8/P15	Fusion	SB	027	800x4	22'	6"	Pass	CH	
10/21/05	P25/P27	Fusion	CI	2316	800x4	214.5'	6"	Pass	CH	

Notes:

HDPE Roll number corresponds with first panel listed under Seam Location.

"East Tie #" refers to weld made to east berm; "E#" are existing panels on the Cell 2 cap

Date/Time	Seam Location	Weld Type	Welder	Unit #	Weld Temp & Speed	Seam Length	Overlap	Air Test Result	Air Test Tech.	Comments
10/21/05	P28/P29	Fusion	CI	2316	800x4	22'	6"	Pass	CH	
10/21/05	P30/P31	Fusion	CI	2316	800x4	153'	6"	Pass	CH	
10/21/05	P30/P32	Fusion	CI	2316	800x4	113'	6"	Pass	CH	
10/21/05	P31/P32	Fusion	CI	2316	800x4	22'	6"	Pass	CH	
10/21/05	P27/P28	Fusion	CT	2164	800x4	188'	6"	Pass	CH	
10/21/05	P27/P29	Fusion	CT	2164	800x4	83'	6"	Pass	CH	
10/21/05	P33/P34	Fusion	CT	2164	800x4	22'	6"	Pass	CH	
10/21/05	P33/P35	Fusion	CT	2164	800x4	177'	6"	Pass	CH	
10/21/05	P34/P35	Fusion	CT	2164	800x4	88'	6"	Pass	CH	
10/21/05	P28/P30	Fusion	SB	027	800x4	181'	6"	Pass	CH	
10/21/05	P29/P30	Fusion	SB	027	800x4	84'	6"	Pass	CH	
10/21/05	P31/P33	Fusion	SB	027	800x4	153'	6"	Pass	CH	
10/21/05	P32/P33	Fusion	SB	027	800x4	23.5'	6"	Pass	CH	
10/21/05	P32/P34	Fusion	SB	027	800x4	87'	6"	Pass	CH	
11/7/05	East Tie 1	Extrusion	CI	101	575/375 (heat/preheat)	62'	6"	Pass	CH	Passed Vacuum Test
11/7/05	East Tie 15	Extrusion	CI	101	575/375 (heat/preheat)	22'	6"	Pass	CH	Passed Vacuum Test
11/7/05	East Tie 22	Extrusion	CI	101	575/375 (heat/preheat)	22'	6"	Pass	CH	Passed Vacuum Test
11/7/05	East Tie 24	Extrusion	CI	101	575/375 (heat/preheat)	22'	6"	Pass	CH	Passed Vacuum Test
11/7/05	East Tie 26	Extrusion	CI	101	575/375 (heat/preheat)	22'	6"	Pass	CH	Passed Vacuum Test
11/7/05	East Tie 27	Extrusion	CI	101	575/375 (heat/preheat)	22'	6"	Pass	CH	Passed Vacuum Test
11/7/05	East Tie 29	Extrusion	CI	101	575/375 (heat/preheat)	22'	6"	Pass	CH	Passed Vacuum Test
11/7/05	East Tie 30	Extrusion	CI	101	575/375 (heat/preheat)	22'	6"	Pass	CH	Passed Vacuum Test
11/7/05	East Tie 32	Extrusion	CI	101	575/375 (heat/preheat)	22'	6"	Pass	CH	Passed Vacuum Test
11/7/05	East Tie 34	Extrusion	CI	101	575/375 (heat/preheat)	22'	6"	Pass	CH	Passed Vacuum Test
11/7/05	East Tie 36	Extrusion	CI	101	575/375 (heat/preheat)	22'	6"	Pass	CH	Passed Vacuum Test
11/7/05	P15/P36	Extrusion	CI	101	575/375 (heat/preheat)	3'	6"	Pass	CH	Passed Vacuum Test
11/7/05	P22/P36	Extrusion	CI	101	575/375 (heat/preheat)	2'	6"	Pass	CH	Passed Vacuum Test

Notes:

HDPE Roll number corresponds with first panel listed under Seam Location.

"East Tie #" refers to weld made to east berm; "E#" are existing panels on the Cell 2 cap

Table 2-8

SLF Cell 3

60 mil HDPE Geomembrane Field Seaming Log

Date/Time	Seam Location	Weld Type	Welder	Unit #	Weld Temp & Speed	Seam Length	Overlap	Air Test Result	Air Test Tech.	Comments
11/8/05	XP1-30	Fusion	CI	2316	510x3.5	14'	6"	Pass	CH	
11/8/05	XP1-31	Fusion	CI	2316	510x3.5	22'	6"	Pass	CH	
11/8/05	XP1-33	Fusion	CI	2316	510x3.5	22'	6"	Pass	CH	
11/8/05	XP1-E58	Fusion	CI	2316	510x3.5	21'	6"	Pass	CH	Tie to Cell 2 Cap
11/8/05	XP1-E59	Fusion	CI	2316	510x3.5	22'	6"	Pass	CH	Tie to Cell 2 Cap
11/8/05	XP1-E60	Fusion	CI	2316	510x3.5	19'	6"	Pass	CH	Tie to Cell 2 Cap
11/8/05	XP1-XP2	Fusion	CI	2316	510x3.5	3'	6"	Pass	CH	
11/8/05	XP2-25	Fusion	CI	2316	510x3.5	12.5'	6"	Pass	CH	
11/8/05	XP2-27	Fusion	CI	2316	510x3.5	22'	6"	Pass	CH	
11/8/05	XP2-28	Fusion	CI	2316	510x3.5	22'	6"	Pass	CH	
11/8/05	XP2-30	Fusion	CI	2316	510x3.5	8'	6"	Pass	CH	
11/8/05	XP2-E55	Fusion	CI	2316	510x3.5	16.5'	6"	Pass	CH	Tie to Cell 2 Cap
11/8/05	XP2-E56	Fusion	CI	2316	510x3.5	22'	6"	Pass	CH	Tie to Cell 2 Cap
11/8/05	XP2-E57	Fusion	CI	2316	510x3.5	22'	6"	Pass	CH	Tie to Cell 2 Cap
11/8/05	XP2-E58	Fusion	CI	2316	510x3.5	1'	6"	Pass	CH	Tie to Cell 2 Cap
11/8/05	XP2-XP3	Fusion	CI	2316	510x3.5	3'	6"	Pass	CH	
11/8/05	XP3-20	Fusion	CI	2316	510x3.5	7.75'	6"	Pass	CH	
11/8/05	XP3-22	Fusion	CI	2316	510x3.5	22'	6"	Pass	CH	
11/8/05	XP3-23	Fusion	CI	2316	510x3.5	22'	6"	Pass	CH	
11/8/05	XP3-25	Fusion	CI	2316	510x3.5	9.5'	6"	Pass	CH	
11/8/05	XP3-E46	Fusion	CI	2316	510x3.5	7.25'	6"	Pass	CH	Tie to Cell 2 Cap
11/8/05	XP3-E47	Fusion	CI	2316	510x3.5	22'	6"	Pass	CH	Tie to Cell 2 Cap
11/8/05	XP3-E54	Fusion	CI	2316	510x3.5	22'	6"	Pass	CH	Tie to Cell 2 Cap
11/8/05	XP3-E55	Fusion	CI	2316	510x3.5	5.5'	6"	Pass	CH	Tie to Cell 2 Cap
11/8/05	XP3-XP4	Fusion	CI	2316	510x3.5	3'	6"	Pass	CH	
11/8/05	XP4-14	Fusion	CI	2316	510x3.5	22'	6"	Pass	CH	
11/8/05	XP4-15	Fusion	CI	2316	510x3.5	22'	6"	Pass	CH	

Notes:

HDPE Roll number corresponds with first panel listed under Seam Location.

"East Tie #" refers to weld made to east berm; "E#" are existing panels on the Cell 2 cap

Date/Time	Seam Location	Weld Type	Welder	Unit #	Weld Temp & Speed	Seam Length	Overlap	Air Test Result	Air Test Tech.	Comments
11/8/05	XP4-20	Fusion	CI	2316	510x3.5	14.25'	6"	Pass	CH	
11/8/05	XP4-E46	Fusion	CI	2316	510x3.5	14.75'	6"	Pass	CH	Tie to Cell 2 Cap
11/8/05	XP4-E48	Fusion	CI	2316	510x3.5	22'	6"	Pass	CH	Tie to Cell 2 Cap
11/8/05	XP4-E49	Fusion	CI	2316	510x3.5	22'	6"	Pass	CH	Tie to Cell 2 Cap
11/9/05	XP4-16	Extrusion	CI	101	540/380 (heat/preheat)	8'	6"	Pass	CH	
11/12/05	P40/P41	Fusion	CI	2316	800x4	71'	6"	Pass	CH	
11/12/05	P40/P42	Fusion	CI	2316	800x4	203.5'	6"	Pass	CH	
11/12/05	P41/P42	Fusion	CI	2316	800x4	22'	6"	Pass	CH	
11/12/05	P41/P43	Fusion	CI	2316	800x4	71.5'	6"	Pass	CH	
11/12/05	P42/P43	Fusion	CI	2316	800x4	13.5'	6"	Pass	CH	
11/12/05	P42/P44	Fusion	CI	2316	800x4	190'	6"	Pass	CH	
11/12/05	P43/P44	Fusion	CI	2316	800x4	22'	6"	Pass	CH	
11/12/05	P45/P47	Fusion	CI	2316	800x4	104'	6"	Pass	CH	
11/12/05	P46/P47	Fusion	CI	2316	800x4	54'	6"	Pass	CH	
11/12/05	P46/P48	Fusion	CI	2316	800x4	121.5'	6"	Pass	CH	
11/12/05	P47/P48	Fusion	CI	2316	800x4	22'	6"	Pass	CH	
11/12/05	P38/P40	Fusion	GL	027	800x4	238'	6"	Pass	CH	
11/12/05	P39/P40	Fusion	GL	027	800x4	37.5'	6"	Pass	CH	
11/12/05	E Tie/P1	Fusion	KB	2333	775x4	60'	6"	Pass	CH	
11/12/05	P35/P37	Fusion	KB	2333	775x4	271'	6"	Pass	CH	
11/12/05	P37/P38	Fusion	KB	2333	775x4	234'	6"	Pass	CH	
11/12/05	P37/P39	Fusion	KB	2333	775x4	39'	6"	Pass	CH	
11/12/05	P38/P39	Fusion	KB	2333	775x4	22'	6"	Pass	CH	
11/12/05	P43/P45	Fusion	KB	2333	775x4	87'	6"	Pass	CH	
11/12/05	P44/P45	Fusion	KB	2333	775x4	15'	6"	Pass	CH	
11/12/05	P44/P46	Fusion	KB	2333	775x4	175'	6"	Pass	CH	
11/12/05	P45/P46	Fusion	KB	2333	775x4	22'	6"	Pass	CH	

Notes:

HDPE Roll number corresponds with first panel listed under Seam Location.

"East Tie #" refers to weld made to east berm; "E#" are existing panels on the Cell 2 cap

Table 2-8

SLF Cell 3

60 mil HDPE Geomembrane Field Seaming Log

Date/Time	Seam Location	Weld Type	Welder	Unit #	Weld Temp & Speed	Seam Length	Overlap	Air Test Result	Air Test Tech.	Comments
11/12/05	P47/P49	Fusion	KB	2333	775x4	156.5'	6"	Pass	CH	
11/12/05	P48/P49	Fusion	KB	2333	774x4	122'	6"	Pass	CH	
11/13/05	P37/E61	Fusion	CI	027	780x3.5	13'	6"	Pass	CH	Tie to Cell 2 Cap
11/13/05	P37/E79	Fusion	CI	027	780x3.5	9.5'	6"	Pass	CH	Tie to Cell 2 Cap
11/13/05	P38/E79	Fusion	CI	027	780x3.5	14'	6"	Pass	CH	Tie to Cell 2 Cap
11/13/05	P38/E80	Fusion	CI	027	780x3.5	7.75'	6"	Pass	CH	Tie to Cell 2 Cap
11/13/05	P40/E80	Fusion	CI	027	780x3.5	15.5'	6"	Pass	CH	Tie to Cell 2 Cap
11/13/05	P45/E101	Fusion	CI	027	780x3.5	1.75'	6"	Pass	CH	Tie to Cell 2 Cap
11/13/05	P47/E101	Fusion	CI	027	780x3.5	21'	6"	Pass	CH	Tie to Cell 2 Cap
11/13/05	P49/E101	Fusion	CI	027	780x3.5	1'	6"	Pass	CH	Tie to Cell 2 Cap
11/13/05	P49/E102	Fusion	CI	027	780x3.5	21'	6"	Pass	CH	Tie to Cell 2 Cap
11/13/05	P50/E102	Fusion	CI	027	780x3.5	1'	6"	Pass	CH	Tie to Cell 2 Cap
11/13/05	P50/E103	Fusion	CI	027	780x3.5	21'	6"	Pass	CH	Tie to Cell 2 Cap
11/13/05	P50/P52	Fusion	GL	2316	780x3.5	82.5'	6"	Pass	CH	
11/13/05	P51/P52	Fusion	GL	2316	780x3.5	144.5'	6"	Pass	CH	
11/13/05	P51/P53	Fusion	GL	2316	780x3.5	54'	6"	Pass	CH	
11/13/05	P52/E103	Fusion	CI	027	780x3.5	1.75'	6"	Pass	CH	Tie to Cell 2 Cap
11/13/05	P52/E104	Fusion	CI	027	780x3.5	19.75'	6"	Pass	CH	Tie to Cell 2 Cap
11/13/05	P52/P53	Fusion	GL	2316	780x3.5	22'	6"	Pass	CH	
11/13/05	P53/P54	Fusion	GL	2316	780x3.5	53'	6"	Pass	CH	
11/13/05	P54/E104	Fusion	CI	027	780x3.5	3'	6"	Pass	CH	Tie to Cell 2 Cap
11/13/05	P54/E106	Fusion	CI	027	780x3.5	19'	6"	Pass	CH	Tie to Cell 2 Cap
11/13/05	P55/E106	Fusion	CI	027	780x3.5	5.5'	6"	Pass	CH	Tie to Cell 2 Cap
11/13/05	P55/E107	Fusion	CI	027	780x3.5	17'	6"	Pass	CH	Tie to Cell 2 Cap
11/13/05	P57/E107	Fusion	CI	027	780x3.5	8.3'	6"	Pass	CH	Tie to Cell 2 Cap
11/13/05	P57/E108	Fusion	CI	027	780x3.5	17.9'	6"	Pass	CH	Tie to Cell 2 Cap
11/13/05	P58/E108	Fusion	CI	027	780x3.5	11.1'	6"	Pass	CH	Tie to Cell 2 Cap

Notes:

HDPE Roll number corresponds with first panel listed under Seam Location.

"East Tie #" refers to weld made to east berm; "E#" are existing panels on the Cell 2 cap

Table 2-8

SLF Cell 3

60 mil HDPE Geomembrane Field Seaming Log

Date/Time	Seam Location	Weld Type	Welder	Unit #	Weld Temp & Speed	Seam Length	Overlap	Air Test Result	Air Test Tech.	Comments
11/13/05	P58/E109	Fusion	CI	027	780x3.5	14.6'	6"	Pass	CH	Tie to Cell 2 Cap
11/13/05	P40/E81	Fusion	CI	027	780x3.5	6.5'	6"	Pass	CH	Tie to Cell 2 Cap
11/13/05	P41/E81	Fusion	CI	027	780x3.5	16.75'	6"	Pass	CH	Tie to Cell 2 Cap
11/13/05	P41/E99	Fusion	CI	027	780x3.5	4.75'	6"	Pass	CH	Tie to Cell 2 Cap
11/13/05	P43/E100	Fusion	CI	027	780x3.5	3.25'	6"	Pass	CH	Tie to Cell 2 Cap
11/13/05	P43/E99	Fusion	CI	027	780x3.5	18.75'	6"	Pass	CH	Tie to Cell 2 Cap
11/13/05	P45/E100	Fusion	CI	027	780x3.5	19.75'	6"	Pass	CH	Tie to Cell 2 Cap
11/13/05	P45/E101	Fusion	CI	027	780x3.5	1.75'	6"	Pass	CH	Tie to Cell 2 Cap
11/13/05	P52/P54	Fusion	CI	027	780x3.5	227'	6"	Pass	CH	
11/13/05	P57/P58	Fusion	GL	2316	780x3.5	250'	6"	Pass	CH	
11/13/05	P59/P60	Fusion	GL	2316	780x3.5	22'	6"	Pass	CH	
11/13/05	P59/P61	Fusion	GL	2316	780x3.5	33'	6"	Pass	CH	
11/13/05	P60/P61	Fusion	GL	2316	780x3.5	94'	6"	Pass	CH	
11/13/05	P60/P62	Fusion	GL	2316	780x3.5	106'	6"	Pass	CH	
11/13/05	P61/P62	Fusion	GL	2316	780x3.5	22'	6"	Pass	CH	
11/13/05	P49/P50	Fusion	KB	2333	775x4	82.5'	6"	Pass	CH	
11/13/05	P49/P51	Fusion	KB	2333	775x4	198'	6"	Pass	CH	
11/13/05	P50/P51	Fusion	KB	2333	775x4	22'	6"	Pass	CH	
11/13/05	P54/P55	Fusion	KB	2333	775x4	84.5'	6"	Pass	CH	
11/13/05	P55/P56	Fusion	KB	2333	775x4	22'	6"	Pass	CH	
11/13/05	P55/P57	Fusion	KB	2333	775x4	79'	6"	Pass	CH	
11/13/05	P56/P57	Fusion	KB	2333	775x4	187'	6"	Pass	CH	
11/13/05	P58/P59	Fusion	KB	2333	775x4	33'	6"	Pass	CH	
11/13/05	P58/P60	Fusion	KB	2333	775x4	201'	6"	Pass	CH	
11/13/05	P54/P56	Fusion	GL	2316	780x3.5	46'	6"	Pass	CH	
11/13/05	P61/P66	Fusion	GL	2316	780x3.5	22'	6"	Pass	CH	
11/13/05	P61/P67	Fusion	GL	2316	780x3.5	22'	6"	Pass	CH	

Notes:

HDPE Roll number corresponds with first panel listed under Seam Location.

"East Tie #" refers to weld made to east berm; "E#" are existing panels on the Cell 2 cap

Date/Time	Seam Location	Weld Type	Welder	Unit #	Weld Temp & Speed	Seam Length	Overlap	Air Test Result	Air Test Tech.	Comments
11/13/05	P61/P68	Fusion	GL	2316	780x3.5	22'	6"	Pass	CH	
11/13/05	P61/P69	Fusion	GL	2316	780x3.5	2'	6"	Pass	CH	
11/13/05	P62/P69	Fusion	GL	2316	780x3.5	20'	6"	Pass	CH	
11/13/05	P62/P70	Fusion	GL	2316	780x3.5	22'	6"	Pass	CH	
11/13/05	P62/P71	Fusion	GL	2316	780x3.5	23.75'	6"	Pass	CH	
11/13/05	P62/P72	Fusion	GL	2316	780x3.5	22'	6"	Pass	CH	
11/13/05	P62/P73	Fusion	GL	2316	780x3.5	22'	6"	Pass	CH	
11/13/05	P70/P71	Fusion	GL	2316	780x3.5	42'	6"	Pass	CH	
11/13/05	P71/P72	Fusion	GL	2316	780x3.5	50'	6"	Pass	CH	
11/13/05	P72/P73	Fusion	GL	2316	780x3.5	49.5'	6"	Pass	CH	
11/13/05	P54/P56	Fusion	KB	2333	775x4	140'	6"	Pass	CH	
11/13/05	P61/P63	Fusion	KB	2333	775x4	22'	6"	Pass	CH	
11/13/05	P61/P64	Fusion	KB	2333	775x4	22'	6"	Pass	CH	
11/13/05	P61/P65	Fusion	KB	2333	775x4	22'	6"	Pass	CH	
11/13/05	P63/P64	Fusion	KB	2333	775x4	35.75'	6"	Pass	CH	
11/13/05	P64/P65	Fusion	KB	2333	775x4	33.75'	6"	Pass	CH	
11/13/05	P65/P66	Fusion	KB	2333	775x4	33'	6"	Pass	CH	
11/13/05	P66/P67	Fusion	KB	2333	775x4	36.5'	6"	Pass	CH	
11/13/05	P67/P68	Fusion	KB	2333	775x4	39'	6"	Pass	CH	
11/13/05	P68/P69	Fusion	KB	2333	775x4	40'	6"	Pass	CH	
11/13/05	P69/P70	Fusion	KB	2333	775x4	40'	6"	Pass	CH	
11/14/05	East Tie 48	Extrusion	CI	101	500/400 (heat/preheat)	22'	6"	Pass	CH	Passed Vacuum Test
11/14/05	East Tie 49	Extrusion	CI	101	500/400 (heat/preheat)	22	6"	Pass	CH	Passed Vacuum Test
11/14/05	East Tie 51	Extrusion	CI	101	500/400 (heat/preheat)	22'	6"	Pass	CH	Passed Vacuum Test
11/14/05	East Tie 53	Extrusion	CI	101	500/400 (heat/preheat)	22'	6"	Pass	CH	Passed Vacuum Test
11/14/05	East Tie 54	Extrusion	CI	101	500/400 (heat/preheat)	22'	6"	Pass	CH	Passed Vacuum Test

Notes:
HDPE Roll number corresponds with first panel listed under Seam Location.
"East Tie #" refers to weld made to east berm; "E#" are existing panels on the Cell 2 cap

Table 2-8
SLF Cell 3
60 mil HDPE Geomembrane Field Seaming Log

Date/Time	Seam Location	Weld Type	Welder	Unit #	Weld Temp & Speed	Seam Length	Overlap	Air Test Result	Air Test Tech.	Comments
11/14/05	East Tie 56	Extrusion	CI	101	500/400 (heat/preheat)	22'	6"	Pass	CH	Passed Vacuum Test
11/14/05	P35/E61	Extrusion	CI	101	500/400 (heat/preheat)	10'	6"	Pass	CH	Passed Vacuum Test
11/14/05	XP1-35	Extrusion	CI	101	500/400 (heat/preheat)	8'	6"	Pass	CH	Passed Vacuum Test
11/14/05	East Tie 73	Extrusion	KB	206	500/360 (heat/preheat)	24'	6"	Pass	CH	Passed Vacuum Test
11/16/05	East Tie 35	Extrusion	CI	101	500/300 (heat/preheat)	16'	6"	Pass	CH	Passed Vacuum Test
11/16/05	East Tie 35	Extrusion	CI	101	500/300 (heat/preheat)	6'	6"	Pass	CH	Passed Vacuum Test
11/16/05	East Tie 37	Extrusion	CI	101	500/300 (heat/preheat)	22'	6"	Pass	CH	Passed Vacuum Test
11/16/05	East Tie 39	Extrusion	CI	101	500/300 (heat/preheat)	22'	6"	Pass	CH	Passed Vacuum Test
11/16/05	East Tie 40	Extrusion	CI	101	500/300 (heat/preheat)	10'	6"	Pass	CH	Passed Vacuum Test
11/16/05	East Tie 40	Extrusion	CI	101	500/300 (heat/preheat)	12'	6"	Pass	CH	Passed Vacuum Test
11/16/05	East Tie 42	Extrusion	CI	101	500/300 (heat/preheat)	22'	6"	Pass	CH	Passed Vacuum Test
11/16/05	East Tie 44	Extrusion	CI	101	500/300 (heat/preheat)	22'	6"	Pass	CH	Passed Vacuum Test
11/16/05	East Tie 46	Extrusion	CI	101	500/300 (heat/preheat)	22'	6"	Pass	CH	Passed Vacuum Test
11/16/05	East Tie 57	Extrusion	CI	101	500/300 (heat/preheat)	22'	6"	Pass	CH	Passed Vacuum Test
11/16/05	East Tie 58	Extrusion	CI	101	500/300 (heat/preheat)	22'	6"	Pass	CH	Passed Vacuum Test
11/16/05	East Tie 60	Extrusion	CI	101	500/300 (heat/preheat)	22'	6"	Pass	CH	Passed Vacuum Test
11/16/05	East Tie 62	Extrusion	CI	101	500/300 (heat/preheat)	22'	6"	Pass	CH	Passed Vacuum Test
11/16/05	East Tie 73	Extrusion	CI	101	500/300 (heat/preheat)	7'	6"	Pass	CH	Passed Vacuum Test

Notes:

HDPE Roll number corresponds with first panel listed under Seam Location.

"East Tie #" refers to weld made to east berm; "E#" are existing panels on the Cell 2 cap

Table 2-8
SLF Cell 3
60 mil HDPE Geomembrane Field Seaming Log

Repair Date	Test Date	Repair Number	Repair Location		Weld Tech	Vacuum Tech	Repair Procedure	Test Pressure	Test Result	Comments
			Northing	Easting						
11/3/05	11/3/05	DS1	885.16	3078.47	CI	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
11/3/05	11/3/05	DS2	865.00	3038.92	CI	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
10/22/05	10/22/05	DS3	865.17	2994.72	CI	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
11/4/05	11/4/05	DS4	925.23	2962.73	CI	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
10/22/05	10/22/05	DS5	957.05	3049.04	CI	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
10/22/05	10/22/05	DS6	983.70	3075.66	CI	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
10/22/05	10/22/05	DS7	1002.54	3057.45	CI	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
10/22/05	10/22/05	DS8	1020.48	3032.52	CI	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
10/22/05	10/22/05	DS9	1039.84	3017.42	CI	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
10/22/05	10/22/05	DS10	1056.51	3054.72	CI	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
10/22/05	10/22/05	DS11	1070.36	3067.40	CI	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
11/3/05	11/3/05	RP1	845.95	3131.46	CI	CH	Patch w/extrusion	5 psi	Pass	
11/3/05	11/3/05	RP2	862.27	3128.20	CI	CH	Patch w/extrusion	5 psi	Pass	
11/3/05	11/3/05	RP3	876.84	3125.32	CI	CH	Patch w/extrusion	5 psi	Pass	
11/3/05	11/3/05	RP4	923.95	3114.77	CI	CH	Patch w/extrusion	5 psi	Pass	
11/4/05	11/4/05	RP5	968.77	3118.52	CI	CH	Patch w/extrusion	5 psi	Pass	
11/4/05	11/4/05	RP6	966.58	3105.28	CI	CH	Patch w/extrusion	5 psi	Pass	
11/3/05	11/3/05	RP7	875.51	3102.96	CI	CH	Patch w/extrusion	5 psi	Pass	
10/22/05	10/22/05	RP8	904.14	3096.67	CI	CH	Patch w/extrusion	5 psi	Pass	
11/4/05	11/4/05	RP9	962.98	3083.37	CI	CH	Patch w/extrusion	5 psi	Pass	
11/3/05	11/3/05	RP10	865.11	3082.78	CI	CH	Patch w/extrusion	5 psi	Pass	
10/22/05	10/22/05	RP11	829.14	3068.28	CI	CH	Patch w/extrusion	5 psi	Pass	
11/3/05	11/3/05	RP12	851.59	3063.77	CI	CH	Patch w/extrusion	5 psi	Pass	
10/22/05	10/22/05	RP13	956.46	3043.86	CI	CH	Patch w/extrusion	5 psi	Pass	
11/3/05	11/3/05	RP14	861.40	3061.49	CI	CH	Patch w/extrusion	5 psi	Pass	
10/22/05	10/22/05	RP15	959.85	3064.35	CI	CH	Patch w/extrusion	5 psi	Pass	
11/7/05	11/7/05	RP16	990.72	3118.50	CI	CH	Patch w/extrusion	5 psi	Pass	
10/22/05	10/22/05	RP17	952.49	3022.39	CI	CH	Patch w/extrusion	5 psi	Pass	
11/4/05	11/4/05	RP18	949.33	3001.49	CI	CH	Patch w/extrusion	5 psi	Pass	
11/3/05	11/3/05	RP19	819.55	3004.52	CI	CH	Patch w/extrusion	5 psi	Pass	
11/4/05	11/4/05	RP20	908.24	2987.02	CI	CH	Patch w/extrusion	5 psi	Pass	
11/4/05	11/4/05	RP21	946.22	2981.17	CI	CH	Patch w/extrusion	5 psi	Pass	
11/4/05	11/4/05	RP22	944.88	2974.34	CI	CH	Patch w/extrusion	5 psi	Pass	

Table 2-9
SLF Cell 3
60 mil HDPE Geomembrane Vacuum Testing Log

Repair Date	Test Date	Repair Number	Repair Location		Weld Tech	Vacuum Tech	Repair Procedure	Test Pressure	Test Result	Comments
			Northing	Easting						
11/4/05	11/4/05	RP23	942.54	2961.20	CI	CH	Patch w/extrusion	5 psi	Pass	
11/4/05	11/4/05	RP24	904.54	2966.27	CI	CH	Patch w/extrusion	5 psi	Pass	
10/22/05	10/22/05	RP25	842.37	2976.77	CI	CH	Patch w/extrusion	5 psi	Pass	
11/4/05	11/4/05	RP26	938.53	2938.90	CI	CH	Patch w/extrusion	5 psi	Pass	
10/22/05	10/22/05	RP27	835.59	2934.03	CI	CH	Patch w/extrusion	5 psi	Pass	
10/22/05	10/22/05	RP28	852.50	2931.48	CI	CH	Patch w/extrusion	5 psi	Pass	
10/22/05	10/22/05	RP29	872.32	2928.36	CI	CH	Patch w/extrusion	5 psi	Pass	
11/4/05	11/4/05	RP30	881.21	2926.96	CI	CH	Patch w/extrusion	5 psi	Pass	
11/4/05	11/4/05	RP31	868.97	2909.28	CI	CH	Patch w/extrusion	5 psi	Pass	
11/4/05	11/4/05	RP32	893.95	2924.71	CI	CH	Patch w/extrusion	5 psi	Pass	
11/4/05	11/4/05	RP33	914.75	2921.19	CI	CH	Patch w/extrusion	5 psi	Pass	
11/4/05	11/4/05	RP34	906.64	2879.35	CI	CH	Patch w/extrusion	5 psi	Pass	
11/4/05	11/4/05	RP35	934.24	2917.85	CI	CH	Patch w/extrusion	5 psi	Pass	
11/7/05	11/7/05	RP36	890.55	2882.91	CI	CH	Patch w/extrusion	5 psi	Pass	
11/7/05	11/7/05	RP37	1070.68	2935.85	CI	CH	Patch w/extrusion	5 psi	Pass	
11/7/05	11/7/05	RP38	1090.04	2921.94	CI	CH	Patch w/extrusion	5 psi	Pass	
11/4/05	11/4/05	RP39	1075.39	2841.03	CI	CH	Patch w/extrusion	5 psi	Pass	
10/22/05	10/22/05	RP40	976.25	3029.97	CI	CH	Patch w/extrusion	5 psi	Pass	
10/22/05	10/22/05	RP41	996.80	3026.19	CI	CH	Patch w/extrusion	5 psi	Pass	
10/22/05	10/22/05	RP42	1001.10	3048.52	CI	CH	Patch w/extrusion	5 psi	Pass	
10/22/05	10/22/05	RP43	996.97	3041.70	CI	CH	Patch w/extrusion	5 psi	Pass	
10/22/05	10/22/05	RP44	1013.98	2992.74	CI	CH	Patch w/extrusion	5 psi	Pass	
10/22/05	10/22/05	RP45	1035.06	2988.97	CI	CH	Patch w/extrusion	5 psi	Pass	
10/22/05	10/22/05	RP46	1046.61	3056.19	CI	CH	Patch w/extrusion	5 psi	Pass	
10/22/05	10/22/05	RP47	1067.71	3052.64	CI	CH	Patch w/extrusion	5 psi	Pass	
10/22/05	10/22/05	RP48	1084.07	3016.62	CI	CH	Patch w/extrusion	5 psi	Pass	
10/22/05	10/22/05	RP49	1104.95	3011.62	CI	CH	Patch w/extrusion	5 psi	Pass	
10/22/05	10/22/05	RP50	1099.71	2979.00	CI	CH	Patch w/extrusion	5 psi	Pass	
10/22/05	10/22/05	RP51	1121.65	2980.38	CI	CH	Patch w/extrusion	5 psi	Pass	
10/22/05	10/22/05	RP52	1142.76	2976.94	CI	CH	Patch w/extrusion	5 psi	Pass	
10/22/05	10/22/05	RP53	1146.53	2999.56	CI	CH	Patch w/extrusion	5 psi	Pass	
10/22/05	10/22/05	RP54	1153.21	3003.64	CI	CH	Patch w/extrusion	5 psi	Pass	
10/22/05	10/22/05	RP55	1167.34	2995.81	CI	CH	Patch w/extrusion	5 psi	Pass	

Table 2-9
SLF Cell 3
60 mil HDPE Geomembrane Vacuum Testing Log

Repair Date	Test Date	Repair Number	Repair Location		Weld Tech	Vacuum Tech	Repair Procedure	Test Pressure	Test Result	Comments
			Northing	Easting						
10/22/05	10/22/05	RP56	1037.22	3074.00	CI	CH	Patch w/extrusion	5 psi	Pass	
11/7/05	11/7/05	RP57	18' North on 15		CI	CH	Patch w/extrusion	5 psi	Pass	
11/4/05	11/4/05	RP58	WEOS		CI	CH	Patch w/extrusion	5 psi	Pass	
11/7/05	11/7/05	RP59	48'WEOS + 8'S on 28		CI	CH	Patch w/extrusion	5 psi	Pass	
11/4/05	11/4/05	RP60	41'WEOS + 6'N on 28		CI	CH	Patch w/extrusion	5 psi	Pass	
11/8/05	11/8/05	RP61	16' WEOS		CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP62	1181.61	3054.17	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP63	1188.95	2987.04	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP64	1216.64	3040.04	KB	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP65	1238.50	3041.27	KB	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP66	1235.26	2871.66	KB	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP67	1256.08	2867.68	KB	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP68	1229.86	3040.41	KB	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP69	1258.48	3024.53	KB	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP70	1256.45	3011.45	KB	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP71	1249.02	2967.13	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP72	WEOS 39' to 45'		KB	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP73	1227.95	2833.07	KB	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP74	16' EEOS		KB	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP75	1151.09	2820.72	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP76	1172.68	2935.82	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP77	1258.72	2880.01	KB	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP78	1279.14	2877.18	KB	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP79	1282.17	2891.33	KB	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP80	1302.94	2886.13	KB	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP81	1311.62	2939.09	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP82	1316.81	2938.27	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP83	1333.11	2936.64	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP84	1354.48	2933.64	KB	CH	Patch w/extrusion	5 psi	Pass	
11/17/05	11/17/05	RP85	1341.96	2858.75	CI	CH	Patch w/extrusion	5 psi	Pass	
11/17/05	11/17/05	RP86	1363.55	2855.03	CI	CH	Patch w/extrusion	5 psi	Pass	
11/17/05	11/17/05	RP87	1356.43	2813.48	CI	CH	Patch w/extrusion	5 psi	Pass	
11/17/05	11/17/05	RP88	1373.40	2783.95	CI	CH	Patch w/extrusion	5 psi	Pass	

Table 2-9
SLF Cell 3
60 mil HDPE Geomembrane Vacuum Testing Log

Repair Date	Test Date	Repair Number	Repair Location		Weld Tech	Vacuum Tech	Repair Procedure	Test Pressure	Test Result	Comments
			Northing	Easting						
11/17/05	11/17/05	RP89	1374.56	2792.87	CI	CH	Patch w/extrusion	5 psi	Pass	
11/17/05	11/17/05	RP90	1386.10	2872.18	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP91	35' EEOS		KB	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP92	36' WEOS		KB	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP93	31' EEOS		KB	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP94	51-52-53 T-Seam		KB	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP95	1404.67	2993.11	KB	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP96	1425.87	2990.18	KB	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP97	1420.26	2953.32	KB	CH	Patch w/extrusion	5 psi	Pass	
11/17/05	11/17/05	RP98	1404.94	2854.60	CI	CH	Patch w/extrusion	5 psi	Pass	
11/17/05	11/17/05	RP99	1426.23	2851.18	CI	CH	Patch w/extrusion	5 psi	Pass	
11/17/05	11/17/05	RP100	1422.31	2822.19	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP101	1465.94	2830.10	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP102	1461.88	2798.19	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP103	1486.97	2827.33	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP104	1525.91	2999.93	KB	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP105	1560.76	2994.22	KB	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP106	1564.77	2971.86	KB	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP107	1543.81	2888.15	KB	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP108	1517.81	2893.33	KB	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP109	62-71-72 T-Seam		KB	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP110	1527.02	2956.33	KB	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP111	1511.32	2872.87	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP112	1508.81	2861.05	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP113	1516.40	2850.95	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP114	1509.25	2851.51	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP115	1505.67	2839.18	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP116	1498.94	2817.85	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP117	1171.51	2815.52	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP118	1180.75	2813.40	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP119	1194.36	2810.04	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP120	1201.10	2808.03	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP121	1217.99	2804.09	CI	CH	Patch w/extrusion	5 psi	Pass	

Table 2-9
SLF Cell 3
60 mil HDPE Geomembrane Vacuum Testing Log

Repair Date	Test Date	Repair Number	Repair Location		Weld Tech	Vacuum Tech	Repair Procedure	Test Pressure	Test Result	Comments
			Northing	Easting						
11/14/05	11/14/05	RP122	1222.90	2802.72	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP123	1248.33	2797.48	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP124	1275.06	2790.70	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP125	1280.52	2789.44	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP126	1284.56	2787.64	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP127	1307.96	2783.34	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP128	1329.06	2778.70	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP129	1351.33	2775.85	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP130	1372.98	2772.08	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP131	1393.90	2772.95	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP132	E106-E107-55		CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP133	1415.67	2775.25	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP134	1439.15	2785.28	CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	RP135	12' North of on 33		CI	CH	Patch w/extrusion	5 psi	Pass	
11/17/05	11/17/05	RP136	NEOS		CI	CH	Patch w/extrusion	5 psi	Pass	
11/18/05	11/18/05	RP137	NEOS		CI	CH	Patch w/extrusion	5 psi	Pass	
11/14/05	11/14/05	DS12	1214.78	3025.84	KB	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
11/14/05	11/14/05	DS13	1241.75	2914.43	KB	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
11/14/05	11/14/05	DS14	1238.52	3039.92	KB	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
11/14/05	11/14/05	DS15	1278.62	2871.12	KB	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
11/14/05	11/14/05	DS16	1301.92	2879.67	KB	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
11/17/05	11/17/05	DS17	1310.67	2805.41	CI	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
11/14/05	11/14/05	DS18	1337.95	2971.72	KB	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
11/14/05	11/14/05	DS19	1188.85	2811.15	CI	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
11/14/05	11/14/05	DS20	1235.68	3019.36	KB	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
11/14/05	11/14/05	DS21	1384.83	2988.50	KB	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
11/14/05	11/14/05	DS22	1386.12	2997.39	KB	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
11/14/05	11/14/05	DS23	1502.84	2921.04	KB	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
11/14/05	11/14/05	DS24	1514.32	2917.15	KB	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
11/14/05	11/14/05	DS25	1521.13	2914.77	KB	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
11/14/05	11/14/05	DS26	1525.73	2935.61	KB	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
11/17/05	11/17/05	DS27	1169.92	3083.25	CI	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
11/17/05	11/17/05	DS27A	1181.94	3081.40	CI	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair

Table 2-9
SLF Cell 3
60 mil HDPE Geomembrane Vacuum Testing Log

Repair Date	Test Date	Repair Number	Repair Location		Weld Tech	Vacuum Tech	Repair Procedure	Test Pressure	Test Result	Comments
			Northing	Easting						
11/17/05	11/17/05	DS27B	1160.52	3084.90	CI	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
11/17/05	11/17/05	DS28	1331.53	3058.75	CI	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
11/17/05	11/17/05	DS28B	1319.02	3060.71	CI	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
11/17/05	11/17/05	DS28A	1344.55	3056.42	CI	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
11/17/05	11/17/05	DS28BB	1306.06	3062.94	CI	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
11/17/05	11/17/05	DS28AA	1354.52	3055.44	CI	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
11/17/05	11/17/05	DS29	859.38	3150.70	CI	CH	Patch w/extrusion	5 psi	Pass	
11/17/05	11/17/05	DS30	1507.82	3024.18	CI	CH	Patch w/extrusion	5 psi	Pass	
11/17/05	11/17/05	RP138	1158.10	2885.48	CI	CH	Patch w/extrusion	5 psi	Pass	
11/17/05	11/17/05	RP139	13'NOES on 35 + 04NEOS		CI	CH	Patch w/extrusion	5 psi	Pass	
11/17/05	11/17/05	RP140	7.5 EOS 49 E Tie to 4'SEOS		CI	CH	Patch w/extrusion	5 psi	Pass	
11/17/05	11/17/05	RP141	E Tie-73 + 63 West		CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP1	1132.17	2821.27	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP2	1125.67	2822.55	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP3	1116.90	2828.42	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP4	1102.78	2826.95	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP5	1095.25	2832.79	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP6	1084.85	2835.38	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP7	1081.13	2831.52	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP8	1074.70	2837.38	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP9	1057.53	2836.91	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP10	1053.63	2841.52	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP11	1046.97	2838.72	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP12	1032.61	2841.92	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP13	1032.07	2845.54	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP14	1018.42	2844.90	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP15	1020.23	2848.08	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP16	1011.90	2846.36	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP17	1010.57	2850.34	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP18	989.96	2851.27	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP19	989.47	2854.03	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP20	967.39	2855.99	CI	CH	Patch w/extrusion	5 psi	Pass	

Table 2-9
SLF Cell 3
60 mil HDPE Geomembrane Vacuum Testing Log

Repair Date	Test Date	Repair Number	Repair Location		Weld Tech	Vacuum Tech	Repair Procedure	Test Pressure	Test Result	Comments
			Northing	Easting						
11/9/05	11/9/05	XRP21	968.27	2858.55	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP22	960.75	2860.41	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP23	960.70	2857.48	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP24	947.11	2863.17	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP25	944.51	2861.08	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP26	935.38	2865.78	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP27	925.96	2867.74	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP28	921.53	2865.99	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP29	905.18	2872.44	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP30	903.56	2869.91	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP31	899.91	2870.86	CI	CH	Patch w/extrusion	5 psi	Pass	
11/9/05	11/9/05	XRP DS1	1091.88	2833.80	CI	CH	Patch w/extrusion	5 psi	Pass	Destruct Repair
11/14/05	11/14/05	XRP32	1137.95	2825.22	CI	CH	Patch w/extrusion	5 psi	Pass	
12/9/05	NA	RP142	1553.41	2911.97	Op-Tech	NA	Patch w/extrusion	NA	NA	North berm, crest of anchor trench

Table 2-9
SLF Cell 3
60 mil HDPE Geomembrane Vacuum Testing Log

CELL 3 INTERIM CAP PANEL LAYOUT

LEGEND

P-51 HDPE PANEL NUMBER

DS8 DESTRUCT LOCATION & NUMBER

CDM Camp Dresser & McKee

consulting engineering construction operations

88 Parker Avenue
Massena, New York 13662

Phone: (315) 769-7011 Fax: (315) 769-6606

1" = 50'

25 0 50

Alcoa Inc. (West Plant) - Massena, New York

SECURE LANDFILL - CELL 3
INTERIM CAP HDPE PANEL LAYOUT

FIGURE 2-1

L:\1902\43352\dwg\CQA figs\ Interim Cap Layout 01/09/06 11:25 kaskiar

Section 3
Conclusions

A construction quality assurance program was conducted during the construction of Cell 3. The program implementation for the work items discussed in this report is in accordance with the CQAP and met the objective of documenting that the project was completed in conformance with the requirements of the design.

Construction quality assurance sampling and testing generally met or exceeded the requirements of the CQAP. Deviations from the provisions of the design have been noted and discussed in the appropriate sections of this report and are summarized in Section 3.1.

It is the conclusion of the CQAO that construction was in conformance with and met the intent of the FDR.

3.1 Deviations from Design and CQAP

As noted in Section 2, the following represents deviations from the design or the CQAP:

- **Grain Size Testing Frequency for the Sand Layer.** The CQAI collected six samples from sand brought on site from Barrett Paving, the approved source for grain size analysis. The volume of sand incorporated into the sand layer above the waste was 7,025 cubic yards. The CQAP requires one test for every 1,000 cubic yards of sand incorporated into the work. The actual testing frequency was one test for every 1,170 cubic yards. All six samples met the grain size distribution specified in Technical Specification Section 02200. In the opinion of the CQAO, the reduction in testing frequency is not a serious deviation from the CQAP.

- **In Situ Moisture-Density Test Frequency for the Sand Layer**. The CQAI performed six moisture-density tests on the compacted sand. The CQAP specifies one test for every 1,000 cubic yards placed and compacted. Since 7,025 cubic yards were incorporated into the work, the actual testing frequency was one test for every 1,170 cubic yards. All of the tests passed. In the opinion of the CQAO, the reduction in testing frequency is not a serious deviation from the CQAP.

- **Gas Vent Installation Detail.** The Cell 3 design in DCO 27 required the installation of two passive gas vents. The DCF 178 specified that geotextile line the hole made in the sand layer and that screened gravel and the vent piping be installed within the lined hole. In the field, the geotextile was wrapped around the gas vent pipe and the screened gravel was placed directly into a hole dug into the sand layer.

3.2 Inspection and Maintenance

There are inspection and maintenance requirements that are specific to Cell 3.

Hay has been installed over the HDPE membrane at the locations and to the thickness shown on Record Drawing B-170305-JM. The design thickness must be maintained to protect the clay and geosynthetic clay in the Cell 3 liner from degradation due to freeze-thaw cycles.

The exposed parts of the cap's HDPE geomembrane must be inspected during normal SLF inspections for damage and repaired as necessary.

The storm drain outside the northeastern corner of the cell must be inspected weekly and after significant storm events. Any debris blocking the drain inlet must be removed.

3.3 Future Actions

DCF 182 allowed the Cell 2 cap geomembrane to be cut to relieve stress before welding the Cell 3 interim cap's geomembrane to it. The Cell 3 geomembrane was welded to the uphill side of the gap in the Cell 2 geomembrane, covering the gap. When Cell 3 is reopened for waste disposal, and if that section of the Cell 2 geomembrane is exposed for waste disposal, the gap must be repaired. Regardless of the extent of future waste disposal, the gap in the Cell 2 cap must be repaired before the permanent Cell 3 cap is installed.

DCF 175 provides details for installing a temporary dam in the spillway at the northeast corner of Cell 3. A dam was installed during 2005 operations and was removed during installation of the interim cap. When Cell 3 is reopened for waste disposal, a temporary dam may be installed to contain leachate generated on the waste surface during rainfall.

It is also suggested for future consideration that if the cell is reopened, a drainage path to the leachate collection system be opened. This can be done by removing waste lying over the drainage sand in the area of the leachate collection sump in the northwest corner of the cell and grading the waste surface to shed runoff to this area. This will maximize drainage of contaminated stormwater to the leachate collection system from where it can be automatically pumped to the Building 79 C treatment system.

Appendix A

DCFs, DCOs and PICRs

ALCOA INC.
SECURE LANDFILL
DESIGN CHANGE ORDER

Design Change Order: 27 Date: May 17, 2004

Engineer of Record: Michael S. Schultz, P.E.; Camp Dresser & McKee

Description *(reference specification or plan number)*:

This Design Change Order (DCO) presents the design revisions to the Secure Landfill (SLF) Cell 3 for the disposal of dredged sediments as part of the Grasse River Remedial Options Pilot Study. The design revisions incorporate an interim berm system and placement of an interim cover on Cell 3 pending an EPA selection of a remedy for the lower Grasse River. The changes to the design are shown in the revised contract documents, which are listed below and attached. The supporting design information is also attached.

Justification/Purpose:

Construction of Cell 3 of the SLF will provide the necessary landfill space to dispose of PCB-containing sediments dredged from the lower Grasse River. The design increases the efficiency of the landfill over the current design, as more waste per unit of landfill area can be placed in the modified design.

This DCO focuses on the Cell 3 berms, base, liner, and interim cap system to be installed to accommodate sediment from the Grasse River Remedial Options Pilot Study. The design allows the future expansion of the cell to accommodate additional sediments from the Grasse River final remedy. If this future dredging phase is implemented, an additional DCO will be submitted to address the final geometry of the landfill and any resulting design changes. This additional DCO will provide the final capping details that would be used if expansion beyond the interim volume is not necessary.

Attachments:

1. Cell 3 Design Change Order 27 Justification Memorandum

2. Contract Drawings

   The contract drawings have been renumbered for bidding purposes for Cell 3. Below is a list of the new contract drawing numbers.

New Contract Drawings:
B-170265-JM Cover Sheet
B-170266-JM General Site Plan
B-170267-JM Existing Conditions - May 2004
B-170268-JM Site Plan - Liner System Topography
B-170269-JM West-East Section
B-170270-JM North-South Section
B-170271-JM Cell 2-3 Berm Section & Details I
B-170272-JM Cell 2-3 Berm Section & Details II
B-170273-JM East Interim Cover
B-170274-JM East Interim Berm Spillway Drainage Detail
B-170275-JM Leak Detection Manhole
B-170276-JM Leachate Transfer Piping
B-170277-JM Drainage System Profile
B-170278-JM Leachate Collection System Details
B-170279-JM Liner System Details
B-170280-JM Miscellaneous Details - I
B-170281-JM Miscellaneous Details - II
B-170290-JM Site Plan - Interim Cover Topography
B-170291-JM Interim Cover Section & Details
B-170292-JM Final Cover Details

3. Revised Technical Specifications

CDM has updated the Technical Specifications from the 1993 Final Design Report. The specifications were not modified for technical content but references to Alcoa Remediation Projects Organization were removed and all referenced standards were updated as necessary. Below is a list of additional Division 0 and Division 1 technical specifications included in the bidding documents.

Table of Contents - Updated
Division 1
01025 – Measurement and Payment
01410 – Testing and Testing Laboratory Services
01500 – Temporary Facilities
01700 – Contract Closeout
01710 – Cleaning
01730 – Operation and Maintenance
01740 – Warranties and Bonds

4. Construction Quality Assurance Plan

This will be submitted for NYSDEC approval prior to the commencement of construction. Construction quality assurance for Cell 3 will follow the Construction Quality Assurance Plan (CQAP) for the SLF. Revisions to this document will be necessary to reflect changes in the project organization. The only anticipated revision to the technical requirements of the current CQAP will be to add inspection and testing procedures for the soil mix, if there are deviations from the previous requirements for testing and inspection of the compacted clay borrow. CDM will revise the CQAP to reflect these technical and organizational changes.

5. Operations and Maintenance Manual

Section 1 through Section 4 of the O&M Manual have been updated for Cell 3 construction and operation. The tables and figures have only been included if they were updated or part of the new formatting.

6. Backup Calculations and Data

Grasse River Sediment Geotechnical Data
Geotechnical Evaluation of Cell 3 Interim Berm

Approved:
Michael S. Schultz, P.E.
License No. 070354
Camp Dresser & McKee

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ALCOA INC.
SECURE LANDFILL
DESIGN CHANGE ORDER

Design Change Order: 28 Date: October 7, 2004

Engineer of Record: Michael S. Schultz, P.E.
Camp Dresser & McKee

Description *(reference specification or plan number)*:

This Design Change Order (DCO) presents the design revisions related to the installation of the compacted clay layer on the east berm of Cell 3 of the Secure Landfill (SLF). The design revision provides guidance on the location of clay placement and additional details for temporary anchoring of the liner system. The changes to the design are shown in the revised design drawing, which is listed below and attached. The proposed change does not require the modification of the approved Technical Specifications.

Justification/Purpose:

This DCO focuses on the construction of the east berm of Cell 3, specifically defining the following:

- Limits of clay placement
- Limits of liner installation
- Temporary anchoring of the liner system

Clay Placement

Existing Design Drawing B-170273-JM provides a typical cross section of the east berm of Cell 3. The section indicates that the Cell 3 interim cap will terminate approximately 9 feet west of the top of the berm, however clay is required to be installed on the entire east sideslope. As shown, the east slope is the outside slope of the berm and does not require the installation of clay at this time. The revised section defines the proposed limits of clay placement.

Liner Installation

The liner system will continue to extend over the top of the east berm and down the east sideslope, however, the revised section now provides guidance on the installation of the HDPE liner to facilitate future expansion. The HDPE liner will be welded in accordance with the Technical Specifications to a minimum of 12 inches beyond the end of clay placement. The intent is to facilitate an easterly path for the stormwater runoff and minimize the potential for water to seep under the clay layer.

Temporary Anchoring of the Liner System

The existing drawing did not provide details for providing temporary anchoring of the liner system at the toe of the east slope. The revised section indicates the placement of select fill material to be placed over the end of the liner system to provide a temporary anchoring system.

Attachments:

1. Revised Cell 3 Design Drawing B-170273-JM - East Interim Cover

Approved:

Michael S. Schultz, P.E.
License No. 070354
Camp Dresser & McKee

Distribution:
Y. Chang, EPA
EPA TSCA Representative
D. Sweredoski, NYSDEC
L. Alden, NYSDEC
G. Townsend, NYSDEC
M. Cox, NYSDEC
L. McShea, Alcoa
R. Esterline, Alcoa
R. Schaar, Envirocon
L. Emerson, Envirocon
J. Mihm, CDM
B. Moon, CDM

ALCOA INC.
SECURE LANDFILL
DESIGN CHANGE ORDER

Design Change Order: 29 Date: March 2, 2005

Engineer of Record: Michael S. Schultz, P.E.; Camp Dresser & McKee

Description *(reference specification or plan number)*:

This Design Change Order (DCO) presents an addendum to the Secure Landfill (SLF) Operations and Maintenance Manual for the operation of the Cell 3 landfill for the 2005 Grasse River Remedial Options Pilot Study.

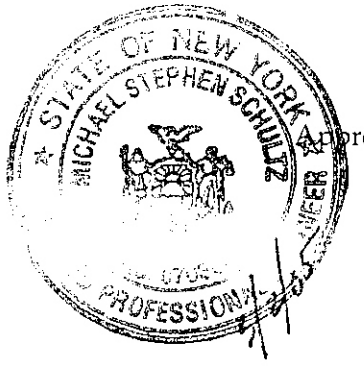
Justification/Purpose:

As outlined in the approved DCO 27 dated May 17, 2004, the construction of Cell 3 of the SLF is to provide the necessary landfill space to dispose of the PCB-containing sediments dredged from the lower Grasse River as part of the Grasse River Remedial Options Pilot Study approved by the US Environmental Protection Agency.

This addendum to the Operations and Maintenance Manual provides the specific information required for placement of the dredged sediments into SLF Cell 3.

Attachments:

1. Secure Landfill Operations and Maintenance Manual, Appendix J, Cell 3 Operations Plan.



Approved:

Michael S. Schultz, P.E.
License No. 070354
Camp Dresser & McKee

Distribution:
Y. Chang, EPA
D. Sweredoski, NYSDEC
Chief, Pesticides and Toxic Substances Branch, EPA
D. Kraft, EPA
L. Alden, NYSDEC
G. Townsend, NYSDEC
M. Cox, NYSDEC

L. McShea, Alcoa
B. Cook, Alcoa
J. Mihm, CDM
M. Crystal, Sevenson

ALCOA

ALCOA INC.
SECURE LANDFILL
DESIGN CHANGE ORDER

Design Change Order: 30 Date: October 7, 2005

Engineer of Record: Michael S. Schultz, P.E.
Camp Dresser & McKee

Description *(reference specification or plan number):*
This Design Change Order (DCO) presents the design revisions to the interim cap of the Secure Landfill (SLF) Cell 3. The design revision incorporates changes to the configuration and grading of the dredged sediments in Cell 3 based on a reduction of the original estimated quantity of dredged sediments anticipated to be placed in Cell 3. The design grading scheme for the interim cap allowed for a waste volume of about 85,000 cy. The original design grading scheme and details of the interim cap system are shown on Design Drawing B-170290-JM entitled Site Plan-Interim Cover Topography, and Design Drawing B-170291-JM entitled Interim Cover Section & Details. The interim cap is planned to be in use for a period of time after the placement of PCB-containing sediments from the Grasse River Remedial Options Pilot Study until additional approved materials are disposed of in Cell 3, or until a decision is made to install a permanent cap. The changes to the design are shown on the attached figures which are listed below. The proposed changes do not require modification of the approved Technical Specifications.

Justification/Purpose:
Design and construction of SLF Cell 3 provided the necessary landfill space to dispose of PCB-containing sediments dredged from the Grasse River. The available waste quantity dredged from the Grasse River is less than the estimated design quantity. This DCO focuses on the configuration and grading of the revised quantity of waste within Cell 3, specifically defining the following:

- Limits of waste placement within Cell 3
- Limits and details of the interim liner system
- Limits of temporary frost protection

Waste Placement

The available waste quantity with base drainage sand and cover soil is estimated to be approximately 17,000 cy. Placement of the waste was performed from the southern end of Cell 3 and progressed northward. The available quantity of waste material will be placed, in accordance with the requirements of DCF-152, on the interior slopes at the south portion of Cell 3 and on the floor of the cell at the north end. The locations of the interim passive gas vents were adjusted to accommodate the location of the waste material on the west slope. The grading scheme for the waste and cover material defining the surface for placement of the interim HDPE cap is shown on Figure 1. This grading scheme will permit the design flow of runoff to the spillway for discharge to the storm drain system as originally designed. The

sections shown on Figures 3, 4, and 5 indicate that the final grades provide the minimum 5 ft. thickness of frost protection of the underlying clay layer on the interior slopes and the floor where waste, drainage sand, and fill is placed. Surfaces within the cell that do not have the required thickness of frost protection provided by the waste or fill materials will be treated as described below.

Variations from the estimated 17,000 cy of waste will be accommodated by adjusting the northern limits of waste disposal on the west and east slopes in a manner consistent with providing the maximum coverage of the west slope that will eliminate the need for supplementary frost protection.

Interim Liner System Installation

The function of the interim cap remains unchanged. The 8 in. layer of cover material to be placed on all surfaces of waste material and to serve as the surface for the HDPE membrane was originally specified to be common fill. The common fill will be substituted with a granular fill as specified in the Technical Specifications. The 60 mil textured HDPE white surface membrane will be installed as indicated in DCO-27. The membrane will be installed to the limits shown on Figure 1. The membrane will be installed and welded in accordance with the Technical Specifications. The membrane will be welded to the Cell 2 cap membrane on the west side of the cell, welded to the Cell 3 secondary liner on the outside of the east berm below the crest, and secured with an anchor trench at the north and south berms, respectively. Sections presenting the details are shown on Figures 4, 5, and 6.

Temporary Frost Protection

Temporary surficial frost protection of the clay forming the base layer of the landfill liner system is required where the liner system remains uncovered and where the thickness of the waste, cover soil, and drainage sand is less than 5 ft. The surficial frost protection material will be hay, blown in place on the required surfaces directly on the HDPE membrane cap. The limit of the surficial frost protection required is shown on Figure 2. The thickness of the applied hay is defined for three zones within the limits shown, and was determined based on frost penetration analyses previously presented in DCO-3. In summary, 36 in. of hay will be applied to the exposed liner on the west, north and east slopes, 18 in. of hay will cover the floor area to the toe of the interior slopes, and 24 in. of hay will be placed on the interior crest of the south and east slopes.

Attachments:

Figure 1	Cell 3 Interim Cap Grading Plan
Figure 2	Cell 3 Limit of Surficial Frost Protection
Figure 3	Cell 3 Sections 1V:1H Ratio
Figure 4	Cell 3 North and South Berm Sections 2V:1H Ratio
Figure 5	Cell 3 West Slope and East Berm Sections 2V:1H Ratio
Figure 6	Cell 3 Interim Cap Section and Details

Approved:

Michael S. Schultz, P.E.
License No. 070354
Camp Dresser & McKee

Distribution:
Y. Chang, EPA
Chief, Pesticides and Toxic Substances Branch, EPA
Dan Craft, EPA
D. Sweredoski, NYSDEC
L. Alden, NYSDEC
G. Townsend, NYSDEC
M. Cox, NYSDEC
L. McShea, Alcoa
B. Cook, Alcoa
F. Gero, Alcoa
A. Elia, Sevenson
M. Sceusa, Sevenson
D. Casey, BBL
T. Dunn, CDM
E. Brown, CDM
C. Jutras, CDM
P. Beattie, CDM

Aluminum Company of America
Remediation Projects Organization

DESIGN CLARIFICATION FORM

(FOR CONSTRUCTION PURPOSES ONLY)

Originator/Company: MKE - TERRY REILLEY Date: 5/23/94

Reference	Document Date	Type of Input
Site/Facility SLF		Req. for Clarif. X
Drawing		Recommend/Modify
Specification		Produce Info.
Other APP. D 4.3 - SLF O&M		Means/Methods

Response Requested before: 5/25/94

Design Clarification Request (Attach additional Sheets or sketches if necessary)

WHAT STABILIZATION REAGENTS ARE ACCEPTABLE FOR USE AT THE SECURE LANDFILL?

cc: B. BRANIFF
J. GRUENHOLZ
T. HIGGINBOTHAM
T. DAVEY
T. REILLEY

FILE: 16-5

Response (Respond within requested period or return with projected response date)

See the attached response.

CDM Use Only

Distribution (Identify Responder with "R")

X	B. Braniff	X	G. Medwar
X	J. Gruenholz	X	W. Kimball
X	J. Mihm	X	T. Davey
X	J. Singleton	R	E. Petrossian
X	T. Higginbotham	X	M. Schultz
X	R. Davis	X	J. Blaum

Log # 74

Date Received 5/23/94
Date Requested 5/25/94
Date Returned 9/2/94

CQA
Kimball
Hunt

Yankowski
Whalen
Button

Secure Landfill
Design Clarification No. 74
30 August 1994

Solidification of materials for placement in the Secure Landfill can be accomplished by mixing with other onsite soils as necessary or the following site specific additives:

Site	Additive	Maximum Amount (by wet weight)
Primary Lagoon	Cement	60%
Dennison Cross Rd.	Quick Lime	10%
	Hydrated Lime	40%
East Marsh	Quick Lime	10%
MK-2 Slurry	Quick Lime	10%

Testing of leachable calcium levels (TCLP) using the quantities shown above result in levels less than the completed compatibility test (2,940 mg/l calcium).

Data from the testing is attached for reference.

MEMORANDUM

TO: Mike Schultz

FROM: Rose Najjar, Dave Knox

DATE: August 10, 1994

SUBJECT: Alcoa Remediation Projects Organization
TCLP Calcium Results for SLF Compatibility

The results of TCLP Calcium testing are as follows:

Sample I.D.	TCLP Calcium Concentration
30SC40	2,400 mg/l
30SC60	2,300 mg/l

Samples 30SC40 and 30SC60 contained a bulk solids of 30 percent and cement dosage of 40 and 60 percent by wet weight, respectively. Both samples contained the same material, which was a composite of equal volumes of sludge from the Primary Lagoon and dredge spoils from Dredge Spoil Areas 1 and 2. The samples had been solidified with cement and cured for approximately 60 days prior to TCLP leachability testing. The samples were shipped on August 3, 1994 from GeoSyntec Laboratory to CDM Laboratory, where the TCLP calcium testing was performed.

These results are less than the 3,000 mg/l used for the existing compatibility testing program.

cc: Bill McInerney
Joe Mihm
Charlie Jutras
Rich Davis

NYSDEC ASP

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

4A

Lab Name: RECRA_ENVIRONMENTAL_INC._ Contract: NY93-365__

Lab Code: RECNY_ Case No.: 4561_ SAS No.: _____ SDG No.: 4292__

Matrix (soil/water): WATER Lab Sample ID: 5934

Level (low/med): LOW__ Date Received: 08/16/94

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_				NR
7440-36-0	Antimony_				NR
7440-38-2	Arsenic__				NR
7440-39-3	Barium___				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium__				NR
7440-70-2	Calcium__	1850000			P
7440-47-3	Chromium_				NR
7440-48-4	Cobalt___				NR
7440-50-8	Copper___				NR
7439-89-6	Iron____				NR
7439-92-1	Lead____				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury__				NR
7440-02-0	Nickel___				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium_				NR
7440-22-4	Silver___				NR
7440-23-5	Sodium___				NR
7440-28-0	Thallium_				NR
7440-62-2	Vanadium_				NR
7440-66-6	Zinc____				NR
_____	Cyanide__				NR

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: ___

Comments:

LAB_SAMPLE_ID: A4429202-ST001466

CLIENT_SAMPLE_ID: 4A

EAST MARSH ROLL-OFFS. 10% quicklime

NYSDEC ASP

1

NYSDEC SAMPLE NO.

INORGANIC ANALYSES DATA SHEET

7

Lab Name: RECRA_ENVIRONMENTAL_INC._ Contract: NY93-365__

Lab Code: RECNY_ Case No.: 4561_ SAS No.: _____ SDG No.: 4292__

Matrix (soil/water): WATER Lab Sample ID: 5933

Level (low/med): LOW__ Date Received: 08/16/94

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_				NR
7440-36-0	Antimony_				NR
7440-38-2	Arsenic__				NR
7440-39-3	Barium___				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium__				NR
7440-70-2	Calcium__	616000_			P_
7440-47-3	Chromium_				NR
7440-48-4	Cobalt___				NR
7440-50-8	Copper___				NR
7439-89-6	Iron____				NR
7439-92-1	Lead____				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury__				NR
7440-02-0	Nickel___				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium_				NR
7440-22-4	Silver___				NR
7440-23-5	Sodium___				NR
7440-28-0	Thallium_				NR
7440-62-2	Vanadium_				NR
7440-66-6	Zinc____				NR
_____	Cyanide__				NR

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: ___

Comments:

LAB_SAMPLE_ID: A4429201-ST001466

CLIENT_SAMPLE_ID: 7

DENNISON CROSS ROAD - 40% Hydrated Lime

FORM I - IN

12/91

NYSDEC ASP

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

7A

Lab Name: RECRA_ENVIRONMENTAL_INC._ Contract: NY93-365__

Lab Code: RECNY_ Case No.: 4561_ SAS No.: _____ SDG No.: 4292__

Matrix (soil/water): WATER Lab Sample ID: 5935

Level (low/med): LOW__ Date Received: 08/16/94

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium	2340000			P
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: ___

Comments:

LAB_SAMPLE_ID: A4429203-ST001466

CLIENT_SAMPLE_ID: 7A

DENNISON CROSS ROAD - 10% QUICKLIME

FORM I - IN

12/91

Alcoa Inc.
Grasse River – Secure Landfill

DESIGN CLARIFICATION FORM

(For Construction Purposes Only)

Log No. 172

Originator/Company: J. Hollingsworth/Envirocon **Date:** 6/6/05

Reference		***Document Date***	***Type of Input***	
Project:	Cell 3 Construction	____	Req for Clarif	☒
Drawing:	____	____	Recom/Modify	☐
Specification:	02605-3.02	8/6/04	Produce Info	☐
Other:		____	Means/Methods	☐

Response Requested Before:

Request: *(Attach additional sheets and/or sketches if necessary.)*

Prior to placement of the top barrel section(s), can the leachate manholes be leak tested by filling with water to above the 18" leachate riser penetration and visually observing for leakage?

Response:

The Engineer has approved the requested testing method. The manhole shall be filled with water to a level of 12" min. above the penetration for the 18" HDPE riser pipe. The 18" pipe shall be plugged to prevent leakage during the testing. All seams and penetrations below this level shall be visually inspected for leakage and approved by the CQAI.

FOR ADMIN USE ONLY

Distribution *(Responder identified with a R)*

☒ Bruce Cook/F. Gero	☒ Jim Hollingsworth
☒ Mike Cox	☒ R. Williams/L. Emerson
☒ Gregg Townsend	☒ L. Villeniuve/T. Brockway
☒ Doug Dumont	☒ Scott McRoberts
☒ Francois Bernardeau	☒ Earl Brown
☒ R T. Dunn/M. Koski	☒ Charlie Jutras
☒ X D. Mock/R. Aviles	☒ Mike Schultz
☐	☐

Log No. 172

Date Received: 6/6/05
Date Requested: 6/6/05
Date Returned: 6/8/05

Alcoa Inc.
Grasse River – SLF CELL 3/ROPS

DESIGN CLARIFICATION FORM

(For Construction Purposes Only)

ROPS Log No. 009
SLF Log No. DCF-173
Originator/Company: Doug Dumont/CDM **Date: 10-10-05**

Reference		***Document Date***	***Type of Input***	
Document:	_____	_____	Req for Clarif	☐
Drawing:	ATTACHED	_____	Recom/Modify	☒
Specification:	_____	_____	Produce Info	☐
Other:		_____	Means/Methods	☐

Request: *(Attach additional sheets and/or sketches if necessary.)*

Please provide method to minimize movement and damage of the exposed geomembrane cover (interim cap) potentially caused by wind uplift forces.

Response:

The accompanying figure shows the recommended locations of a weight system for restraining the exposed geomembrane interim cap against potential wind uplift forces.

The GSE 60 mil HDPE textured white geomembrane shall be covered with hay on the floor of Cell 3 and on the slopes at the northern half of the cell and selected berm crests in areas as shown on the attached figure. The thickness of the hay is variable in each area and was determined based on consideration of frost protection requirements (DCO-30) and uniform weight contribution on the exposed geomembrane.

The exposed geomembrane cover on the southern portion of the west slope and the 5% platform shall receive individual concrete weights at the locations and spacing shown on the attached figure. The spacing dimensions shown are measured parallel to the geomembrane cap surfaces. The base of the individual weights shall be square or rectangular and shall weigh a minimum of 200 lbs. each. The concrete weights shall have no flashing or sharp edges that can cut or penetrate the geomembrane. Each weight shall be carefully placed and centered on a separate sheet of GSE NW-32 non-woven "heavyweight" geotextile (or equal) cut to a size that shall be at least 1.5 ft. larger than the contact footprint of the individual weight. The geotextile sheets may be tack-welded to the HDPE textured geomembrane.

The distribution of weights shown on the attached figure is based on the proposed grades developed for the volume of waste material provided on 9/30/05. If the area of waste placement on the 5:1 west slope extends to the north, the corresponding area of exposed geomembrane cover that will not require surficial frost protection shall receive the concrete weights placed at the spacing designated.

FOR ADMIN USE ONLY	ROPS Log No. DCF 009 SLF Log No. DCF 173
Distribution *(Responder identified with a R)* ☒ Bruce Cook ☒ Larry McShea ☒ Mike Cox (NYSDEC) ☐ Young Chang (USEPA) ☒ Rick Esterline ☒ Francis Gero R M. Koski/T. Dunn ☒ Matt Sceusa ☐ Dave Mock ☒ Doug Dumont ☒ Alan Elia ☒ Earl Brown ☒ Dan Casey ☐ Heather VanDewalker ☐ Fay Navratil (NYSDOH) ☒ Mike Schultz ☒ Charlie Jutras ☒ Kelly Thibodeaux ☐ Paula Beattie ☐ Dino Zack	Date Originated 10/10/05 Return Date Requested: 10/14/05 Date Returned: 10/20/05

DCF-174

Alcoa Inc.
Grasse River – ROPS

DESIGN CLARIFICATION FORM

(For Construction Purposes Only)

Originator/Company: C. Jutras/CDM **Date:** 8/2/2005

Reference		***Document Date***	***Type of Input***	
Document:		_____	Req for Clarif	☐
Drawing:	_____	_____	Recom/Modify	☐
Specification:	_____	_____	Produce Info	☐
Other:	Leachate Transfer	_____	Means/Methods	☒

Request: *(Attach additional sheets and/or sketches if necessary.)*

The approval to operate Cell 3 has been received from NYSDEC and USEPA. The Cell 3 leachate transfer system piping is complete through Building 79C in conformance with the design documents and has been pressure tested. The leachate transfer pump has been installed in the leachate collection system and the discharge has been connected to the Cell 3 leachate transfer piping. The transfer pump can be operated manually but the automatic control system is not expected to be programmed, tested and ready for operation for at least a week.

Can placement of waste material in the cell begin with the understanding that the leachate collection system will be manually operated until the automatic control system is on line?

Response:

Waste placement can begin with manual operation of the leachate transfer system.

Waste placement cannot begin until the manually initiated transfer process is coordinated with and acceptable to the Alcoa operators of the Building 79C treatment system.

A vacuum truck or other means of supplemental leachate transfer must be available to transfer leachate that ponds above the bottom of the cell to Building 79C.

FOR ADMIN USE ONLY		SLF Log No. 174 ROPS Log No. 010
Distribution *(Responder identified with a R)*		
☒ Bruce Cook	☒ Mike Crystal	
☒ Larry McShea	☒ Earl Brown	Date Originated: 8/3/05
☒ Mike Cox (NYSDEC)	☒ Dan Casey	Return Date Requested: 8/4/05
☒ Young Chang (USEPA)	☐ Heather VanDewalker	Date Returned: 8/3/05
☒ Rick Esterline	☐ Fay Navratil (NYSDOH)	
☐ Francis Gero	☐ File	

Approved	Initialed	Date
Bruce Cook	_____	_____
Dan Casey	_____	_____

Alcoa Inc.
Grasse River – SLF CELL 3/ROPS

DESIGN CLARIFICATION FORM
(For Construction Purposes Only)

ROPS Log No. DCF-013
SLF Log No. DCF-175
Originator/Company: Charles Jutras/CDM **Date: 9-12-05**

Reference		***Document Date***	***Type of Input***	
Document:	____	____	Req for Clarif	☐
Drawing:	ATTACHED	____	Recom/Modify	☒
Specification:	____	____	Produce Info	☐
Other:	Contingency	____	Means/Methods	☐

Request: *(Attach additional sheets and/or sketches if necessary.)*

As waste placement continues in Cell 3, the volume available to store stormwater/leachate in the event of a heavy rain will decrease as will the freeboard between the waste surface and the spillway to the storm drain system.

Please provide direction for temporarily blocking or raising the elevation of the spillway to maximize containment of water within the cell.

Response:

Two schemes are suggested as alternative methods to temporarily contain storm water within the crest limit of Cell 3.

Alternate A requires that a 40 mil or 60 mil HDPE membrane be cut to the shape of the spillway section and attached to the primary HDPE liner with a continuous weld. The membrane will be positioned in a vertical position and supported by haybales and sand bags against the east side of the membrane as shown on Figure 1.

Alternate B requires that the primary liner be cut across the width of the spillway as shown on Figure 2. The east cut edge of the liner will be lifted up to permit the placement of sand bags in the cavity to the east and beneath the liner. A sufficient number of sand bags will be placed against and beneath the liner to create a raised "berm" within the spillway limits. The opening must be covered with plastic sheeting to prevent water from entering the cell and hydrating the GCL under the primary liner, until the "berm" is removed and the liner system restored to the original function.

FOR ADMIN USE ONLY		ROPS Log No. DCF-013 SLF Log No. DCF-175
Distribution *(Responder identified with a R)*		
☒ Bruce Cook	☒ Alan Elia	Date Originated 9/12/05
☒ Larry McShea	☒ Earl Brown	Return Date Requested: ASAP
☒ Mike Cox (NYSDEC)	☒ Dan Casey	Date Returned: 10/17/05
☒ Young Chang (USEPA)	☐ Heather VanDewalker	
☒ Rick Esterline	☐ Fay Navratil (NYSDOH)	
☒ Francis Gero	☒ Mike Schultz	
☒ R M. Koski/T. Dunn	☒ Charlie Jutras	
☒ Matt Sceusa	☒ Kelly Thibodeaux	
☐ Dave Mock	☒ Paula Beattie	
☒ Doug Dumont	☒ Dino Zack	

Alcoa Inc.
Grasse River – SLF CELL 3/ROPS

DESIGN CLARIFICATION FORM

(For Construction Purposes Only)

ROPS Log No. DCF-014
SLF Log No. DCF-176
Originator/Company: Charles Jutras/CDM **Date: 9-28-05**

Reference		***Document Date***	***Type of Input***	
Document:	_____	_____	Req for Clarif	☐
Drawing:	ATTACHED	_____	Recom/Modify	☒
Specification:	_____	_____	Produce Info	☐
Other:	Contingency	_____	Means/Methods	☐

Request: *(Attach additional sheets and/or sketches if necessary.)*

Alcoa is proposing to partially install the HDPE cap when grading of the existing waste in the cell is complete from the south to some point near the middle of the cell. The remainder of the cap will be completed at the end of this construction season's activities.

Please provide guidance on how stormwater collected on this cap will be managed.

Response:

Stormwater that does not contact waste is clean stormwater and can be discharged to the ground outside of the cell.

The northern end of the temporary partial cap should be laid over a berm of sand, waste or other suitable material to form a collection basin. Water can be pumped from this basin to the outside of the cell.

The attached figure shows two of the possible locations for the berm that forms the northern end of the basin. The figure also shows the associated catchment area, basin floor area, volume of water collected in the catchment area based on 4.5 inches of rainfall and the height of the dam required to contain the water (minimum height is volume of water divided by the basin floor area).

The rainfall quantity of 4.5 inches is slightly greater than the 100 year, 24 hour storm of 4.4 inches.

The recommended berm height will be checked and revised, if necessary, when the final location of the containment berm and the as-built waste grades are determined. This DCF will be amended to document the final recommendation.

FOR ADMIN USE ONLY		ROPS Log No. DCF-014 SLF Log No. DCF-176
Distribution *(Responder identified with a R)*		
☒ Bruce Cook	☒ Alan Elia	Date Originated 9/28/05
☒ Larry McShea	☒ Earl Brown	Return Date Requested: 10/14/05
☒ Mike Cox (NYSDEC)	☒ Dan Casey	Date Returned: 10/14/05
☒ Young Chang (USEPA)	☐ Heather VanDewalker	
☒ Rick Esterline	☐ Fay Navratil (NYSDOH)	
☒ Francis Gero	☒ Mike Schultz	
R M. Koski/T. Dunn	☒ Charlie Jutras	
☒ Matt Sceusa	☒ Kelly Thibodeaux	
☐ Dave Mock	☒ Paula Beattie	
☒ Doug Dumont	☐ Dino Zack	

Alcoa Inc.
Grasse River – SLF CELL 3/ROPS

DESIGN CLARIFICATION FORM

(For Construction Purposes Only)

ROPS Log No. n/a
SLF Log No. DCF-177R
Originator/Company: Leo Villeneuve/S&L

Date: 10-11-05

Reference		***Document Date***
Document:	_____	_____
Drawing:	Attached sketch	_____
Specification:	_____	_____
Other:		_____

Type of Input

- Req for Clarif ☐
- Recom/Modify ☒
- Produce Info ☐
- Means/Methods ☐

Request: *(Attach additional sheets and/or sketches if necessary.)*

Due to the depth of the ductbanks and the safety aspect of the new installation, we propose to cut off existing conduit on the vertical portion, use a threadless or 3 part coupling then offset out to the revised junction box location.

Response:

The proposed solution is acceptable provided that the new conduit location provides a minimum of 18-inches of clearance between the manhole and the new junction box location, see revised sketch.

The Crouse-Hinds UNF three part couplings, which were originally submitted by S&L Electric on Friday October 14, 2005 are acceptable for use on the 2" underground conduit risers, provided that the couplings are located within the stone drain located on the north side of the SLF. If the couplings are located in fill material, the Crouse-Hinds XD Expansion/Deflection Coupling is required due to the potential expansion/contraction conditions. Please see attached S&L submittal.

~~Due to the conduit depth and potential expansion/contraction conditions, CDM proposes the use of a Crouse-Hinds XD Expansion/Deflection Coupling. Please see attached cutsheet.~~

FOR ADMIN USE ONLY	ROPS Log No. n/a SLF Log No. DCF 177R
Distribution *(Responder identified with a R)* ☒ Bruce Cook ☒ Larry McShea ☒ Mike Cox (NYSDEC) ☐ Young Chang (USEPA) ☒ Rick Esterline ☒ Francis Gero ☒ M. Koski/T. Dunn ☐ Matt Sceusa ☒ R Raul Aviles/Dave Mock ☒ Doug Dumont ☒ Leo Villeneuve (S&L) ☐ Alan Elia ☒ Earl Brown ☒ Dan Casey ☐ Heather VanDewalker ☐ Fay Navratil (NYSDOH) ☒ Mike Schultz ☒ Charlie Jutras ☐ Kelly Thibodeaux ☐ Paula Beattie ☐ Dino Zack	Date Originated 10/11/05 Return Date Requested: 10/25/05 Date Returned: 10/18/05

Alcoa Inc.
Grasse River – SLF CELL 3/ROPS

DESIGN CLARIFICATION FORM

(For Construction Purposes Only)

ROPS Log No. DCF-
SLF Log No. DCF-178
Originator/Company: Doug Dumont/CDM

Date: 10-17-05

Reference		***Document Date***	***Type of Input***	
Document:	**DCO-30**	_____	Req for Clarif	☐
Drawing:	Figure 6	_____	Recom/Modify	☒
Specification:	02200-2.01-G	Pea Gravel	Produce Info	☐
Other:		_____	Means/Methods	☐

Request: *(Attach additional sheets and/or sketches if necessary.)*

Can the on site screened gravel (Graymont CDM-50) be used in place of the Pea Gravel called out on Drawing B-170291-JM Detail A for the Passive Gas Vents ? What size perforations are required for the screened segment of the pvc pipe?

Response:

The screened gravel (Graymont Round Roofing Stone, CDM-50) may be substituted for the Pea Gravel specified as filter pack around the perforated PVC pipe, with additional requirements as provided herein. The screened gravel shall be washed and contain no fines. The screened gravel material shall be free of loam, clay, fines, roots, trash and other deleterious material.

Installation of the gas vents may be done by drilling boreholes using an open bucket auger method. Alternatively, open excavation, requiring minimal material removal, will be permitted. Waste material removed from this landfill shall be disposed within the landfill in accordance with the Owner's operating procedures. If auger drilling, a minimum 18 in. diameter borehole shall be drilled to the required depth. Exercise extreme caution during drilling or excavation so as not to contact or damage the primary liner below the waste.

A non-woven geotextile filter fabric (GSE NW-10 minimum) is required between the waste material and the screened gravel. The fabric segments shall be placed with minimum 1 ft. overlap on the sides and bottom of the hole to cover all surfaces of the exposed waste material in contact with the screened gravel. During backfilling, the screened gravel shall be carefully placed against the fabric to prevent tearing or puncturing of the fabric. In order to prevent infiltration of the 8 in. sand cover layer into the screened gravel, the fabric shall be wrapped and properly overlapped around the top surface of the screened gravel and secured to the 6 in. pvc pipe with a stainless steel clamp with screw.

The screened pvc pipe segment below the HDPE cap membrane shall have perforations drilled into the pipe. The perforated pipe shall have four rows of holes 3/8 in. in diameter on 4 in. centers, with allowable tolerances 1/16 in. on the diameter and plus 1/4-in. on the spacing. The rows shall be parallel to the axis

of the pipe and 90 degrees plus or minus 5 degrees apart. A stainless steel clamp with screw shall be used to secure the fabric to the pipe. A neoprene sponge shall be used between the pipe and the fabric and between the fabric and the clamp.

All activities associated with the installation of the gas vents shall be done in the presence of the CQA representative.

FOR ADMIN USE ONLY		ROPS Log No. DCF SLF Log No. DCF-178
Distribution *(Responder identified with a R)*		
☒ Bruce Cook	☐ Alan Elia	Date Originated 10/17/05
☒ Larry McShea	☒ Earl Brown	Return Date Requested: ASAP
☒ Mike Cox (NYSDEC)	☒ Dan Casey	Date Returned:
☒ Young Chang (USEPA)	☐ Heather VanDewalker	
☒ Rick Esterline	☐ Fay Navratil (NYSDOH)	
☒ Francis Gero	☒ Mike Schultz	
R M. Koski/T. Dunn	☒ Charlie Jutras	
☒ Matt Sceusa	☒ Kelly Thibodeaux	
☐ Dave Mock	☒ Paula Beattie	
☒ Doug Dumont	☐ Dino Zack	

Alcoa Inc.
Grasse River – SLF CELL 3/ROPS

DESIGN CLARIFICATION FORM

(For Construction Purposes Only)

ROPS Log No. n/a
SLF Log No. DCF-179
Originator/Company: Doug Dumont/CDM **Date: 10-17-05**

Reference		***Document Date***	***Type of Input***	
Document:	**DCO-30**	_____	Req for Clarif	☒
Drawing:	Figure 5	_____	Recom/Modify	☐
Specification:	_____	_____	Produce Info	☐
Other:		_____	Means/Methods	☐

Request: *(Attach additional sheets and/or sketches if necessary.)*

Please provide clarification pertaining to the existing Cell 3 Primary Geonet and Geotextile materials placed on the Cell 2 cap west of the 5% slope.

In order to weld the Cell 3 cap liner to the existing Cell 2 cap liner (as shown on Fig 5, Detail A of reference document) it is proposed to pull back and fold the materials over the 5% area.

Response:

The proposed solution of folding the Geonet and Geotexitle materials back over the 5% slope to expose the Cell 2 cap is acceptable and approved by the Engineer with the following requirements. The length of the materials shall be pulled back and laid flat on the 5% slope as one layer. Folding of the Geonet shall be performed carefully to prevent creasing or crimping of the Geonet at the bend. Vehicle movement or heavy weight that could cause creasing of the Geonet will not be permitted in the area of the bend before and after installation of the HDPE geomembrane cap.

FOR ADMIN USE ONLY	ROPS Log No. n/a SLF Log No. DCF 179
Distribution *(Responder identified with a R)* ☒ Bruce Cook ☒ Larry McShea ☒ Mike Cox (NYSDEC) ☐ Young Chang (USEPA) ☒ Rick Esterline ☒ Francis Gero R M. Koski/T. Dunn ☒ Matt Sceusa ☐ Dave Mock ☒ Doug Dumont ☒ Alan Elia ☒ Earl Brown ☒ Dan Casey ☐ Heather VanDewalker ☐ Fay Navratil (NYSDOH) ☒ Mike Schultz ☒ Charlie Jutras ☒ Kelly Thibodeaux ☐ Paula Beattie ☐ Dino Zack	Date Originated 10/17/05 Return Date Requested: 10/25/05 Date Returned: 10/18/05

Alcoa Inc.
Grasse River – SLF CELL 3/ROPS

DESIGN CLARIFICATION FORM

(For Construction Purposes Only)

ROPS Log No. n/a
SLF Log No. DCF-180
Originator/Company: Doug Dumont/CDM **Date: 10-17-05**

Reference		***Document Date***	***Type of Input***	
Document:	**DCO-30**	_____	Req for Clarif	☒
Drawing:	Figure 4	_____	Recom/Modify	☐
Specification:	_____	_____	Produce Info	☐
Other:		_____	Means/Methods	☐

Request: *(Attach additional sheets and/or sketches if necessary.)*

Please provide clarification for anchoring the Cell 3 cap liner adjacent to L7 & L8 manholes.

Response:

The Cell 3 cap liner shall be placed in an anchor trench adjacent to L7 & L8 manholes. Due to the limited space between the Cell 3 primary liner anchor trench and each manhole, the length of the horizontal section of the cap liner in the bottom of the anchor trench shall be maintained to the extent possible. Hand excavation of the anchor trench in this area (due to the limited space between the manhole and existing Cell 3 primary liner anchor trench) may be required to prevent potential damage to the existing Cell 3 liner system. Place specifiedbackfill in lifts and compact each lift in accordance with the specifications.

FOR ADMIN USE ONLY	ROPS Log No. n/a SLF Log No. DCF 180
Distribution *(Responder identified with a R)* ☒ Bruce Cook ☒ Larry McShea ☒ Mike Cox (NYSDEC) ☐ Young Chang (USEPA) ☒ Rick Esterline ☒ Francis Gero R M. Koski/T. Dunn ☒ Matt Sceusa ☐ Dave Mock ☒ Doug Dumont ☒ Alan Elia ☒ Earl Brown ☒ Dan Casey ☐ Heather VanDewalker ☐ Fay Navratil (NYSDOH) ☒ Mike Schultz ☒ Charlie Jutras ☒ Kelly Thibodeaux ☐ Paula Beattie ☐ Dino Zack	Date Originated 10/17/05 Return Date Requested: 10/25/05 Date Returned: 10/18/05

Alcoa Inc.
Grasse River – SLF CELL 3/ROPS

DESIGN CLARIFICATION FORM

(For Construction Purposes Only)

ROPS Log No. n/a
SLF Log No. DCF-181
Originator/Company: Doug Dumont/CDM

Date: 10-17-05

Reference		***Document Date***	***Type of Input***	
Document:	_____	_____	Req for Clarif	☐
Drawing:	_____	_____	Recom/Modify	☒
Specification:	_____	_____	Produce Info	☐
Other:		_____	Means/Methods	☐

Request: *(Attach additional sheets and/or sketches if necessary.)*

Please provide clarification and details for installation of the 45 degree elbow and cap on the cleanout riser pipe.

Response:

See attached detail.

FOR ADMIN USE ONLY		**ROPS Log No. n/a**
Distribution *(Responder identified with a R)*		**SLF Log No. DCF-181**
☒ Bruce Cook	☐ Alan Elia	
☒ Larry McShea	☒ Earl Brown	Date Originated 10/17/05
☒ Mike Cox (NYSDEC)	☒ Dan Casey	Return Date Requested: ASAP
☒ Young Chang (USEPA)	☐ Heather VanDewalker	Date Returned: 10-21-05
☒ Rick Esterline	☐ Fay Navratil (NYSDOH)	
☒ Francis Gero	☒ Mike Schultz	
☒ R M. Koski/T. Dunn	☒ Charlie Jutras	
☒ Matt Sceusa	☒ Kelly Thibodeaux	
☐ Dave Mock	☒ Paula Beattie	
☒ Doug Dumont	☐ Dino Zack	

Alcoa Inc.
Grasse River – SLF CELL 3/ROPS

DESIGN CLARIFICATION FORM
(For Construction Purposes Only)

ROPS Log No. n/a
SLF Log No. DCF-182
Originator/Company: Doug Dumont/CDM **Date: 11/7/05**

Reference		***Document Date***	***Type of Input***	
Document:	_____	_____	Req for Clarif	☒
Drawing:	_____	_____	Recom/Modify	☐
Specification:	_____	_____	Produce Info	☐
Other:		_____	Means/Methods	☒

Request: *(Attach additional sheets and/or sketches if necessary.)*

The liner crew extrusion welded the first few panels of the cell 3 liner to the cell 2 cap. During welding, the cell 2 cap geomembrane, which was under tension, stretched in the area of the weld, resulting in a thin geomembrane section and strength not meeting specification.

The liner crew superintendent recommends that the cell 2 cap be cut below and parallel to the proposed location of the cell 3 liner seam, opening a gap to relieve the stress. The liner crew will place the cell 3 60-mil geomembrane cap over the cut portion of the cell 2 cap, and will then fusion weld the cell 3 60-mil geomembrane interim cap to the uphill cut end of the cell 2 cap. This leaves the lower cut end of the Cell 2 cap under the Cell 3 cap.

Is this procedure acceptable?

Response:

This procedure as shown on the attached Figure 1 is acceptable, with the requirement that detailed field records of the actual repair be prepared for documentation in the record drawings and other applicable record documents.

Repair of the Cell 2 geomembrane at this location will be required as a first priority at the time of future placement of waste and construction of the final landfill cap. When the interim Cell 3 geomembrane cap is removed for the future waste placement on this portion of Cell 2 west of the 5% platform, the Cell 2 geomembrane cap must be made whole by a suitable repair as shown schematically on the attached Figure 2.

FOR ADMIN USE ONLY		ROPS Log No. n/a SLF Log No. DCF-182
Distribution *(Responder identified with a R)*		
☒ Bruce Cook	☒ Alan Elia	Date Originated 11/7/05
☒ Larry McShea	☒ Earl Brown	Return Date Requested: ASAP
☒ Mike Cox (NYSDEC)	☒ Dan Casey	Date Returned: 11/18/05
☒ Young Chang (USEPA)	☐ Heather VanDewalker	
☒ Rick Esterline	☐ Fay Navratil (NYSDOH)	
☒ Francis Gero	☒ Mike Schultz	
R M. Koski/T. Dunn	☒ Charlie Jutras	
☒ Matt Sceusa	☒ Kelly Thibodeaux	
☐ Dave Mock	☒ Paula Beattie	
☒ Doug Dumont	☐ Dino Zack	

ALCOA INC.

Grasse River Remedial Options Pilot Study (ROPS)

Problem Identification and Correction Report (PICR)

Report No. C3 006 Date: 9/30/2005

Date of Occurrence: 8/02/2005 Notification Date: 8/03/2005

Description of Problem:

A second access ramp to the cell was under construction on 8/2. In discussions with the contractor, it was agreed that the ramp would be constructed only on the outside of the cell with the inside portion of the ramp to be completed at a later time, when needed, from the inside of the cell in accordance with DCF 152.

During the afternoon of 8/2 the CQA inspector observed that the sand had been placed over the top of the berm to the inside of the cell and a bulldozer was backblading the bottom of the sand to grade. This was due to miscommunication to field crew.

Inspection of the liner system surrounding the ramp indicated displacement of polyfelt that covers the drainage net over the primary liner and slight displacement of the net in the area of the ramp.

Description of Corrective Measures:

No damage was done and no repairs were necessary.

Measures Implemented to Prevent Future Occurrences:

Better communication between Contractor supervisor and crafts.

Distribution:
G. Townsend, NYSDEC
M. Cox, NYSDEC
B. Cook, Alcoa
F. Gero, Alcoa
M. Mahar, Sevenson
K. Thibodeaux, Sevenson
D. Casey, BBL
E. Brown, CDM
M. Schultz, CDM
D. Dumont, CDM

Approved:_____
Charles A. Jutras
Camp Dresser & McKee

ALCOA INC.

Secure Landfill Cell 3 and Grasse River Remedial Options Pilot Study (ROPS)

Problem Identification and Correction Report (PICR)

Report No. C3 007 Date: 11/15/2005

Date of Occurrence: 11/07/2005 Notification Date: 11/08/2005

Description of Problem:
CDM Field Engineering noted that the eastern end of the Cell 3 cap geomembrane had been welded to the primary liner of the Cell 3 liner system over the top of the east berm. Approximately half of the cap was welded at the time the observation was made.

DCO 30 specifies that the Cell 3 cap geomembrane be extended over the top of the east berm and welded to the secondary liner, below the seam where the primary liner is sealed to the secondary liner.

Description of Corrective Measures:
CDM Engineer of Record was consulted. He determined that welding to the east berm done to date can remain in its present state. The remaining weld must be done to the secondary liner as specified in DCO 30

Measures Implemented to Prevent Future Occurrences:
A review of DCO 30 and better communication among CDM CQA, Engineering and the Contractor.

Distribution:
G. Townsend, NYSDEC
M. Cox, NYSDEC
B. Cook, Alcoa
F. Gero, Alcoa
A. Elia, Sevenson
K. Thibodeaux, Sevenson
D. Casey, BBL
E. Brown, CDM
M. Schultz, CDM
D. Dumont, CDM

Approved: _____
Charles A. Jutras
Camp Dresser & McKee

Appendix B

ROPS IQAT Form 13
Waste Placement

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
8/12/05	C1	19	1	C1	Cyclone / filter cake	20.8		P
8/12/05	C1	20	1	C1	Cyclone / filter cake	17.4		P
8/12/05	C2	21	1	C2	Cyclone / filter cake	17.4		P
8/12/05	C2	22	1	C2	Cyclone / filter cake	17.4		P
8/12/05	C2	23	1	C2	Cyclone / filter cake	20.8		P
8/12/05	C2	24	1	C2	Cyclone / filter cake	24.3		P
8/12/05	C2	25	1	C2	Cyclone / filter cake	24.3		P
8/12/05	C2	26	1	C2	Cyclone / filter cake	17.4		P
8/12/05	C2	27	1	C2	Cyclone / filter cake	17.4		P
8/12/05	C2	28	1	C2	Cyclone / filter cake	17.4		P
8/12/05	C2	29	1	C2	Cyclone / filter cake	17.4		P
8/12/05	C2	30	1	C2	Cyclone / filter cake	17.4		P
8/12/05	B2	31	1	B2	Cyclone / filter cake	20.8		P
8/12/05	B2	32	1	B2	Cyclone / filter cake	17.4		P
8/12/05	B2	33	1	B2	Cyclone / filter cake	20.8		P
8/12/05	B2	34	1	B2	Cyclone / filter cake	20.8		P
8/12/05	B2	35	1	B2	Cyclone / filter cake	20.8		P
8/12/05	B2	36	1	B2	Cyclone / filter cake	20.8		P
8/12/05	B2	37	1	B2	Cyclone / filter cake	17.4		P
8/12/05	B2	38	1	B2	Cyclone / filter cake	17.4		P
8/12/05	B2	39	1	B2	Cyclone / filter cake	20.8		P
8/15/05	D1	1	1	D1	Cyclone / filter	24.3		P
8/15/05	D1	2	1	D1	Cyclone / filter	20.8		P
8/15/05	D1	3	1	D1	Cyclone / filter	20.8		P
8/15/05	D1	4	1	D1	Cyclone / filter	20.8		P
8/15/05	D1	5	1	D1	Cyclone / filter	27.8		P
8/15/05	D1	6	1	D1	Cyclone / filter	24.3		P
8/15/05	D1	7	1	D1	Cyclone / filter	20.8		P
8/15/05	D1	8	1	D1	Cyclone / filter	20.8		P
8/15/05	D1	9	1	D1	Cyclone / filter	27.8		P
8/15/05	D1	10	1	D1	Cyclone / filter	27.8		P
8/15/05	D2	1	1	D2	Cyclone / filter	27.8		P
8/15/05	D2	2	1	D2	Cyclone / filter	27.8		P
8/15/05	D2	3	1	D2	Cyclone / filter	24.3		P
8/15/05	D2	4	1	D2	Cyclone / filter	24.3		P
8/15/05	D2	5	1	D2	Cyclone / filter	24.3		P
8/15/05	D2	6	1	D2	Cyclone / filter	20.8		P
8/15/05	D2	7	1	D2	Cyclone / filter	20.8		P
8/15/05	D2	8	1	D2	Cyclone / filter	20.8		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
8/15/05	D2	9	1	D2	Cyclone / filter	20.8		P
8/15/05	D2	10	1	D2	Cyclone / filter	24.3		P
8/15/05	E1	1	1	E1	Cyclone / filter	27.8		P
8/15/05	E1	2	1	E1	Cyclone / filter	20.8		P
8/15/05	E1	3	1	E1	Cyclone / filter	24.3		P
8/15/05	E1	4	1	E1	Cyclone / filter	24.3		P
8/15/05	E1	5	1	E1	Cyclone / filter	24.3		P
8/15/05	E1	6	1	E1	Cyclone / filter	24.3		P
8/15/05	E1	7	1	E1	Cyclone / filter	27.8		P
8/15/05	E1	8	1	E1	Cyclone / filter	27.8		P
8/15/05	E1	9	1	E1	Cyclone / filter	20.8		P
8/15/05	E1	10	1	E1	Cyclone / filter cake	20.8		P
8/15/05	E2	1	1	E2	Cyclone / filter cake	20.8		P
8/15/05	E2	2	1	E2	Cyclone / filter cake	20.8		P
8/15/05	E2	3	1	E2	Cyclone / filter cake	24.3		P
8/15/05	E2	4	1	E2	Cyclone / filter cake	20.8		P
8/15/05	E2	5	1	E2	Cyclone / filter cake	27.8		P
8/15/05	E2	6	1	E2	Cyclone / filter cake	24.3		P
8/15/05	E2	7	1	E2	Cyclone / filter cake	24.3		P
8/15/05	E2	8	1	E2	Cyclone / filter cake	24.3		P
8/15/05	E2	9	1	E2	Cyclone / filter cake	27.8		P
8/15/05	E2	10	1	E2	Cyclone / filter cake	27.8		P
8/15/05	F1	1	1	F1	Cyclone / filter cake	27.8		P
8/15/05	F1	2	1	F1	Cyclone / filter cake	20.8		P
8/15/05	F1	3	1	F1	Cyclone / filter cake	20.8		P
8/15/05	F1	4	1	F1	Cyclone / filter cake	24.3		P
8/15/05	F1	5	1	F1	Cyclone / filter cake	20.8		P
8/15/05	F1	6	1	F1	Cyclone / filter cake	24.3		P
8/15/05	F1	7	1	F1	Cyclone / filter cake	24.3		P
8/15/05	F1	8	1	F1	Cyclone / filter cake	20.8		P
8/15/05	F1	9	1	F1	Cyclone / filter cake	20.8		P
8/15/05	F1	10	1	F1	Cyclone / filter cake	20.8		P
8/15/05	F2	1	1	F2	Cyclone / filter cake	20.8		P
8/15/05	F2	2	1	F2	Cyclone / filter cake	27.8		P
8/15/05	F2	3	1	F2	Cyclone / filter cake	24.3		P
8/15/05	F2	4	1	F2	Cyclone / filter cake	17.4		P
8/15/05	F2	5	1	F2	Cyclone / filter cake	24.3		P
8/15/05	F2	6	1	F2	Cyclone / filter cake	20.8		P
8/15/05	F2	7	1	F2	Cyclone / filter cake	20.8		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
8/15/05	F2	8	1	F2	Cyclone / filter cake	27.8		P
8/15/05	F2	9	1	F2	Cyclone / filter	17.4		P
8/15/05	F2	10	1	F2	Cyclone / filter	17.4		P
8/15/05	G1	1	1	G1	Cyclone / filter	20.8		P
8/15/05	G1	2	1	G1	Cyclone / filter	20.8		P
8/15/05	G1	3	1	G1	Cyclone / filter	20.8		P
8/15/05	G1	4	1	G1	Cyclone / filter	27.8		P
8/15/05	G1	5	1	G1	Cyclone / filter	27.8		P
8/15/05	G1	6	1	G1	Cyclone / filter	24.3		P
8/15/05	G1	7	1	G1	Cyclone / filter	20.8		P
8/15/05	G1	8	1	G1	Cyclone / filter	20.8		P
8/15/05	G1	9	1	G1	Cyclone / filter	20.8		P
8/15/05	G1	10	1	G1	Cyclone / filter	20.8		P
8/15/05	G2	1	1	G2	Cyclone / filter	24.3		P
8/15/05	G2	2	1	G2	Cyclone / filter	24.3		P
8/15/05	G2	3	1	G2	Cyclone / filter	27.8		P
8/15/05	G2	4	1	G2	Cyclone / filter	27.8		P
8/15/05	G2	5	1	G2	Cyclone / filter	27.8		P
8/15/05	G2	6	1	G2	Cyclone / filter	20.8		P
8/15/05	G2	7	1	G2	Cyclone / filter	27.8		P
8/15/05	G2	8	1	G2	Cyclone / filter	27.8		P
8/15/05	G2	9	1	G2	Cyclone / filter	20.8		P
8/15/05	G2	10	1	G2	Cyclone / filter	20.8		P
8/15/05		1	1	A3	Cyclone / filter	17.4		P
8/15/05		2	1	A3	Cyclone / filter	17.4		P
8/15/05		3	1	A3	Cyclone / filter	20.8		P
8/15/05		4	1	A3	Cyclone / filter	17.4		P
8/15/05		5	1	A3	Cyclone / filter	24.3		P
8/15/05		6	1	A3	Cyclone / filter	20.8		P
8/15/05		7	1	A3	Cyclone / filter	20.8		P
8/15/05		8	1	A3	Cyclone / filter	17.4		P
8/15/05		9	1	A3	Cyclone / filter	20.8		P
8/15/05		10	1	A3	Cyclone / filter	20.8		P
8/15/05		1	1	B3	Cyclone / filter	27.8		P
8/15/05		2	1	B3	Cyclone / filter	17.4		P
8/15/05		3	1	B3	Cyclone / filter	17.4		P
8/15/05		4	1	B3	Cyclone / filter	17.4		P
8/15/05		5	1	B3	Cyclone / filter	20.8		P
8/15/05		6	1	B3	Cyclone / filter	20.8		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
8/15/05		7	1	B3	Cyclone / filter	24.3		P
8/15/05		8	1	B3	Cyclone / filter	20.8		P
8/15/05		9	1	B3	Cyclone / filter	20.8		P
8/15/05		10	1	B3	Cyclone / filter	17.4		P
8/15/05		1	1	C3	Cyclone / filter	17.4		P
8/15/05		2	1	C3	Cyclone / filter	17.4		P
8/15/05		3	1	C3	Cyclone / filter	20.8		P
8/15/05		4	1	C3	Cyclone / filter	20.8		P
8/15/05		5	1	C3	Cyclone / filter	24.3		P
8/15/05		6	1	C3	Cyclone / filter	24.3		P
8/15/05		7	1	C3	Cyclone / filter	27.8		P
8/15/05		8	1	C3	Cyclone / filter	17.4		P
8/15/05		9	1	C3	Cyclone / filter	17.4		P
8/15/05		10	1	C3	Cyclone / filter	17.4		P
8/15/05		1	1	D3	Cyclone / filter	17.4		P
8/15/05		2	1	D3	Cyclone / filter	20.8		P
8/15/05		3	1	D3	Cyclone / filter	17.4		P
8/15/05		4	1	D3	Cyclone / filter	24.3		P
8/15/05		5	1	D3	Cyclone / filter	27.8		P
8/15/05		6	1	D3	Cyclone / filter	27.8		P
8/15/05		7	1	D3	Cyclone / filter	27.8		P
8/15/05		8	1	D3	Cyclone / filter	20.8		P
8/15/05		9	1	D3	Cyclone / filter	20.8		P
8/15/05		10	1	D3	Cyclone / filter	24.3		P
8/15/05		1	1	E3	Cyclone / filter	17.4		P
8/15/05		2	1	E3	Cyclone / filter	20.8		P
8/15/05		3	1	E3	Cyclone / filter	20.8		P
8/15/05		4	1	E3	Cyclone / filter	20.8		P
8/15/05		5	1	E3	Cyclone / filter	20.8		P
8/15/05		6	1	E3	Cyclone / filter	20.8		P
8/15/05		7	1	E3	Cyclone / filter	20.8		P
8/15/05		8	1	E3	Cyclone / filter	27.8		P
8/15/05		9	1	E3	Cyclone / filter	20.8		P
8/15/05		10	1	E3	Cyclone / filter	20.8		P
8/15/05		1	1	F3	Cyclone / filter	24.3		P
8/15/05		2	1	F3	Cyclone / filter	20.8		P
8/15/05		3	1	F3	Cyclone / filter	20.8		P
8/15/05		4	1	F3	Cyclone / filter	20.8		P
8/15/05		5	1	F3	Cyclone / filter	20.8		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
8/15/05		6	1	F3	Cyclone / filter	20.8		P
8/15/05		7	1	F3	Cyclone / filter	20.8		P
8/15/05		8	1	F3	Cyclone / filter	20.8		P
8/15/05		9	1	F3	Cyclone / filter	20.8		P
8/15/05		10	1	F3	Cyclone / filter	20.8		P
8/15/05		1	1	G3	Cyclone / filter	20.8		P
8/15/05		2	1	G3	Cyclone / filter	20.8		P
8/15/05		3	1	G3	Cyclone / filter	20.8		P
8/15/05		4	1	G3	Cyclone / filter	17.4		P
8/15/05		5	1	G3	Cyclone / filter	20.8		P
8/15/05		6	1	G3	Cyclone / filter	17.4		P
8/15/05		7	1	G3	Cyclone / filter	17.4		P
8/15/05		8	1	G3	Cyclone / filter	17.4		P
8/15/05		9	1	G3	Cyclone / filter	20.8		P
8/15/05		10	1	G3	Cyclone / filter	20.8		P
8/15/05		1	1	H3	Cyclone / filter	20.8		P
8/15/05		2	1	H3	Cyclone / filter	20.8		P
8/15/05		3	1	H3	Cyclone / filter	20.8		P
8/15/05		4	1	H3	Cyclone / filter	20.8		P
8/15/05		5	1	H3	Cyclone / filter	17.4		P
8/15/05		6	1	H3	Cyclone / filter	17.4		P
8/15/05		7	1	H3	Cyclone / filter	17.4		P
8/15/05		8	1	H3	Cyclone / filter	17.4		P
8/15/05		9	1	H3	Cyclone / filter	17.4		P
8/15/05		10	1	H3	Cyclone / filter	20.8		P
8/15/05		1	1	I3	Cyclone / filter	20.8		P
8/15/05		2	1	I3	Cyclone / filter	20.8		P
8/15/05		3	1	I3	Cyclone / filter	20.8		P
8/15/05		4	1	I3	Cyclone / filter	20.8		P
8/15/05		5	1	I3	Cyclone / filter	20.8		P
8/15/05		6	1	I3	Cyclone / filter	20.8		P
8/15/05		7	1	I3	Cyclone / filter	20.8		P
8/15/05		8	1	I3	Cyclone / filter	17.4		P
8/15/05		9	1	I3	Cyclone / filter	20.8		P
8/15/05		10	1	I3	Cyclone / filter	20.8		P
8/15/05		1	1	J3	Cyclone / filter	24.3		P
8/15/05		2	1	J3	Cyclone / filter	24.3		P
8/15/05		3	1	J3	Cyclone / filter	27.8		P
8/15/05		4	1	J3	Cyclone / filter	27.8		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
8/15/05		5	1	J3	Cyclone / filter	20.8		P
8/15/05		6	1	J3	Cyclone / filter	20.8		P
8/15/05		7	1	J3	Cyclone / filter	17.4		P
8/15/05		8	1	J3	Cyclone / filter	24.3		P
8/15/05		9	1	J3	Cyclone / filter	20.8		P
8/15/05		10	1	J3	Cyclone / filter	20.8		P
8/16/05		1	1	J3	Cyclone / filter	27.8	8/16/2005	P
8/16/05		2	1	J3	Cyclone / filter	27.8		P
8/16/05		3	1	J3	Cyclone / filter	27.8		P
8/16/05		4	1	J3	Cyclone / filter	24.3		P
8/16/05		5	1	J3	Cyclone / filter	24.3		P
8/16/05		6	1	J3	Cyclone / filter	27.8		P
8/16/05		7	1	J3	Cyclone / filter	20.8		P
8/16/05		8	1	J3	Cyclone / filter	27.8		P
8/16/05		9	1	J3	Cyclone / filter	24.3		P
8/16/05		10	1	J3	Cyclone / filter	24.3		P
8/16/05		1	1	K2	Cyclone / filter	27.8		P
8/16/05		2	1	K2	Cyclone / filter	27.8		P
8/16/05		3	1	K2	Cyclone / filter	27.8		P
8/16/05		4	1	K2	Cyclone / filter	27.8		P
8/16/05		5	1	K2	Cyclone / filter	20.8		P
8/16/05		6	1	K2	Cyclone / filter	24.3		P
8/16/05		7	1	K2	Cyclone / filter	20.8		P
8/16/05		8	1	K2	Cyclone / filter	17.4		P
8/16/05		9	1	K2	Cyclone / filter	20.8		P
8/16/05		10	1	K2	Cyclone / filter	20.8		P
8/16/05		1	1	K1	Cyclone / filter	17.4		P
8/16/05		2	1	K1	Cyclone / filter	17.4		P
8/16/05		3	1	K1	Cyclone / filter	20.8		P
8/16/05		4	1	K1	Cyclone / filter	27.8		P
8/16/05		5	1	K1	Cyclone / filter	20.8		P
8/16/05		6	1	K1	Cyclone / filter	20.8		P
8/16/05		7	1	K1	Cyclone / filter	20.8		P
8/16/05		8	1	K1	Cyclone / filter	20.8		P
8/16/05		9	1	K1	Cyclone / filter	20.8		P
8/16/05		10	1	K1	Cyclone / filter	20.8		P
8/16/05		1	1	J2	Cyclone / filter	17.4		P
8/16/05		2	1	J2	Cyclone / filter	20.8		P
8/16/05		3	1	J2	Cyclone / filter	17.4		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
8/16/05		4	1	J2	Cyclone / filter	17.4		P
8/16/05		5	1	J2	Cyclone / filter	20.8		P
8/16/05		6	1	J2	Cyclone / filter	20.8		P
8/16/05		7	1	J2	Cyclone / filter	20.8		P
8/16/05		8	1	J2	Cyclone / filter	20.8		P
8/16/05		9	1	J2	Cyclone / filter	20.8		P
8/16/05		10	1	J2	Cyclone / filter	20.8		P
8/16/05		1	1	J1	Cyclone / filter	20.8		P
8/16/05		2	1	J1	Cyclone / filter	20.8		P
8/16/05		3	1	J1	Cyclone / filter	20.8		P
8/16/05		4	1	J1	Cyclone / filter	20.8		P
8/16/05		5	1	J1	Cyclone / filter	20.8		P
8/16/05		6	1	J1	Cyclone / filter	20.8		P
8/16/05		7	1	J1	Cyclone / filter	20.8		P
8/16/05		8	1	J1	Cyclone / filter	20.8		P
8/16/05		9	1	J1	Cyclone / filter	20.8		P
8/16/05		10	1	J1	Cyclone / filter	20.8		P
8/16/05		1	1	I1	Cyclone / filter	20.8		P
8/16/05		2	1	I1	Cyclone / filter	17.4		P
8/16/05		3	1	I1	Cyclone / filter	20.8		P
8/16/05		4	1	I1	Cyclone / filter	24.3		P
8/16/05		5	1	I1	Cyclone / filter	24.3		P
8/16/05		6	1	I1	Cyclone / filter	24.3		P
8/16/05		7	1	I1	Cyclone / filter	20.8		P
8/16/05		8	1	I1	Cyclone / filter	20.8		P
8/16/05		9	1	I1	Cyclone / filter	20.8		P
8/16/05		10	1	I1	Cyclone / filter	17.4		P
8/16/05		1	1	I2	Cyclone / filter	24.3		P
8/16/05		2	1	I2	Cyclone / filter	24.3		P
8/16/05		3	1	I2	Cyclone / filter	24.3		P
8/16/05		4	1	I2	Cyclone / filter	20.8		P
8/16/05		5	1	I2	Cyclone / filter	20.8		P
8/16/05		6	1	I2	Cyclone / filter	20.8		P
8/16/05		7	1	I2	Cyclone / filter	20.8		P
8/16/05		8	1	I2	Cyclone / filter	24.3		P
8/16/05		9	1	I2	Cyclone / filter	20.8		P
8/16/05		10	1	I2	Cyclone / filter	20.8		P
8/16/05		1	1	H2	Cyclone / filter	20.8		P
8/16/05		2	1	H2	Cyclone / filter	20.8		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
8/16/05		3	1	H2	Cyclone / filter	20.8		P
8/16/05		4	1	H2	Cyclone / filter	20.8		P
8/16/05		5	1	H2	Cyclone / filter	20.8		P
8/16/05		6	1	H2	Cyclone / filter	20.8		P
8/16/05		7	1	H2	Cyclone / filter	24.3		P
8/16/05		8	1	H2	Cyclone / filter	24.3		P
8/16/05		9	1	H2	Cyclone / filter	17.4		P
8/16/05		10	1	H2	Cyclone / filter	17.4		P
8/16/05		1	1	H1	Cyclone / filter	20.8		P
8/16/05		2	1	H1	Cyclone / filter	20.8		P
8/16/05		3	1	H1	Cyclone / filter	20.8		P
8/16/05		4	1	H1	Cyclone / filter	20.8		P
8/16/05		5	1	H1	Cyclone / filter	20.8		P
8/16/05		6	1	H1	Cyclone / filter	20.8		P
8/16/05		7	1	H1	Cyclone / filter	17.4		P
8/16/05		8	1	H1	Cyclone / filter	17.4		P
8/16/05		9	1	H1	Cyclone / filter	20.8		P
8/16/05		10	1	H1	Cyclone / filter	24.3		P
8/25/05		1	2	F1	Cyclone/Filter/Debris	20.8		P
8/25/05		2	2	F1	Cyclone/Filter/Debris	20.8		P
8/25/05		3	2	F1	Cyclone/Filter/Debris	20.8		P
8/25/05		4	2	F1	Cyclone/Filter/Debris	20.8		P
8/25/05		5	2	F1	Cyclone/Filter/Debris	20.8		P
8/25/05		6	2	F1	Cyclone/Filter/Debris	20.8		P
8/25/05		7	2	F1	Cyclone/Filter/Debris	17.4		P
8/25/05		8	2	F1	Cyclone/Filter/Debris	17.4		P
8/25/05		9	2	F1	Cyclone/Filter/Debris	27.8		P
8/25/05		10	2	F1	Cyclone/Filter/Debris	27.8		P
8/25/05		1	2	F2	Cyclone/Filter/Debris	27.8		P
8/25/05		2	2	F2	Cyclone/Filter/Debris	27.8		P
8/25/05		3	2	F2	Cyclone/Filter/Debris	27.8		P
8/25/05		4	2	F2	Cyclone/Filter/Debris	24.3		P
8/25/05		5	2	F2	Cyclone/Filter/Debris	24.3		P
8/25/05		6	2	F2	Cyclone/Filter/Debris	24.3		P
8/25/05		7	2	F2	Cyclone/Filter/Debris	24.3		P
8/25/05		8	2	F2	Cyclone/Filter/Debris	27.8		P
8/25/05		9	2	F2	Cyclone/Filter/Debris	20.8		P
8/25/05		10	2	F2	Cyclone/Filter/Debris	17.4		P
8/25/05		1	2	F3	Cyclone/Filter/Debris	20.8		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
8/25/05		2	2	F3	Cyclone/Filter/Debris	20.8		P
8/25/05		3	2	F3	Cyclone/Filter/Debris	20.8		P
8/25/05		4	2	F3	Cyclone/Filter/Debris	27.8		P
8/25/05		5	2	F3	Cyclone/Filter/Debris	27.8		P
8/25/05		6	2	F3	Cyclone/Filter/Debris	27.8		P
8/25/05		7	2	F3	Cyclone/Filter/Debris	27.8		P
8/25/05		8	2	F3	Cyclone/Filter/Debris	24.3		P
8/25/05		9	2	F3	Cyclone/Filter/Debris	24.3		P
8/25/05		10	2	F3	Cyclone/Filter/Debris	27.8		P
8/25/05		1	2	G1	Cyclone/Filter/Debris	20.8		P
8/25/05		2	2	G1	Cyclone/Filter/Debris	20.8		P
8/25/05		3	2	G1	Cyclone/Filter/Debris	20.8		P
8/25/05		4	2	G1	Cyclone/Filter/Debris	27.8		P
8/25/05		5	2	G1	Cyclone/Filter/Debris	27.8		P
8/25/05		6	2	G1	Cyclone/Filter/Debris	27.8		P
8/25/05		7	2	G1	Cyclone/Filter/Debris	24.3		P
8/25/05		8	2	G1	Cyclone/Filter/Debris	17.4		P
8/25/05		9	2	G1	Cyclone/Filter/Debris	17.4		P
8/25/05		10	2	G1	Cyclone/Filter/Debris	20.8		P
8/25/05		1	2	G2	Cyclone/Filter/Debris	20.8		P
8/25/05		2	2	G2	Cyclone/Filter/Debris	20.8		P
8/25/05		3	2	G2	Cyclone/Filter/Debris	27.8		P
8/25/05		4	2	G2	Cyclone/Filter/Debris	27.8		P
8/25/05		5	2	G2	Cyclone/Filter/Debris	20.8		P
8/25/05		6	2	G2	Cyclone/Filter/Debris	24.3		P
8/25/05		7	2	G2	Cyclone/Filter/Debris	27.8		P
8/25/05		8	2	G2	Cyclone/Filter/Debris	27.8		P
8/25/05		9	2	G2	Cyclone/Filter/Debris	34.7		P
8/25/05		10	2	G2	Cyclone/Filter/Debris	20.8		P
8/25/05		1	2	G3	Cyclone/Filter/Debris	17.4		P
8/25/05		2	2	G3	Cyclone/Filter/Debris	17.4		P
8/25/05		3	2	G3	Cyclone/Filter/Debris	20.8		P
8/25/05		4	2	G3	Cyclone/Filter/Debris	20.8		P
8/25/05		5	2	G3	Cyclone/Filter/Debris	20.8		P
8/25/05		6	2	G3	Cyclone/Filter/Debris	20.8		P
8/25/05		7	2	G3	Cyclone/Filter/Debris	20.8		P
8/25/05		8	2	G3	Cyclone/Filter/Debris	20.8		P
8/25/05		9	2	G3	Cyclone/Filter/Debris	20.8		P
8/25/05		10	2	G3	Cyclone/Filter/Debris	20.8		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
8/26/05		1	2	B1	Cyclone/Filter/Debris	34.7		P
8/26/05		2	2	B1	Cyclone/Filter/Debris	27.8		P
8/26/05		3	2	B1	Cyclone/Filter/Debris	27.8		P
8/26/05		4	2	B1	Cyclone/Filter/Debris	27.8		P
8/26/05		5	2	B1	Cyclone/Filter/Debris	24.3		P
8/26/05		6	2	B1	Cyclone/Filter/Debris	20.8		P
8/26/05		7	2	B1	Cyclone/Filter/Debris	27.8		P
8/26/05		8	2	B1	Cyclone/Filter/Debris	27.8		P
8/26/05		9	2	B1	Cyclone/Filter/Debris	27.8		P
8/26/05		10	2	B1	Cyclone/Filter/Debris	20.8		P
8/26/05		1	2	B2	Cyclone/Filter/Debris	20.8		P
8/26/05		2	2	B2	Cyclone/Filter/Debris	27.8		P
8/26/05		3	2	B2	Cyclone/Filter/Debris	27.8		P
8/26/05		4	2	B2	Cyclone/Filter/Debris	24.3		P
8/26/05		5	2	B2	Cyclone/Filter/Debris	24.3		P
8/26/05		6	2	B2	Cyclone/Filter/Debris	27.8		P
8/26/05		7	2	B2	Cyclone/Filter/Debris	20.8		P
8/26/05		8	2	B2	Cyclone/Filter/Debris	27.8		P
8/26/05		9	2	B2	Cyclone/Filter/Debris	24.3		P
8/26/05		10	2	B2	Cyclone/Filter/Debris	27.8		P
8/26/05		1	2	B3	Cyclone/Filter/Debris	24.3		P
8/26/05		2	2	B3	Cyclone/Filter/Debris	27.8		P
8/26/05		3	2	B3	Cyclone/Filter/Debris	27.8		P
8/26/05		4	2	B3	Cyclone/Filter/Debris	27.8		P
8/26/05		5	2	B3	Cyclone/Filter/Debris	27.8		P
8/26/05		6	2	B3	Cyclone/Filter/Debris	20.8		P
8/26/05		7	2	B3	Cyclone/Filter/Debris	24.3		P
8/26/05		8	2	B3	Cyclone/Filter/Debris	27.8		P
8/26/05		9	2	B3	Cyclone/Filter/Debris	24.3		P
8/26/05		10	2	B3	Cyclone/Filter/Debris	24.3		P
8/26/05		1	2	C1	Cyclone/Filter/Debris	20.8		P
8/26/05		2	2	C1	Cyclone/Filter/Debris	20.8		P
8/26/05		3	2	C1	Cyclone/Filter/Debris	20.8		P
8/26/05		4	2	C1	Cyclone/Filter/Debris	17.4		P
8/26/05		5	2	C1	Cyclone/Filter/Debris	17.4		P
8/26/05		6	2	C1	Cyclone/Filter/Debris	27.8		P
8/26/05		7	2	C1	Cyclone/Filter/Debris	34.7		P
8/26/05		8	2	C1	Cyclone/Filter/Debris	27.8		P
8/26/05		9	2	C1	Cyclone/Filter/Debris	24.3		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
8/26/05		10	2	C1	Cyclone/Filter/Debris	20.8		P
8/26/05		1	2	C2	Cyclone/Filter/Debris	20.8		P
8/26/05		2	2	C2	Cyclone/Filter/Debris	20.8		P
8/26/05		3	2	C2	Cyclone/Filter/Debris	17.4		P
8/26/05		4	2	C2	Cyclone/Filter/Debris	20.8		P
8/26/05		5	2	C2	Cyclone/Filter/Debris	20.8		P
8/26/05		6	2	C2	Cyclone/Filter/Debris	20.8		P
8/26/05		7	2	C2	Cyclone/Filter/Debris	20.8		P
8/26/05		8	2	C2	Cyclone/Filter/Debris	20.8		P
8/26/05		9	2	C2	Cyclone/Filter/Debris	17.4		P
8/26/05		10	2	C2	Cyclone/Filter/Debris	17.4		P
8/26/05		1	2	C3	Cyclone/Filter/Debris	20.8		P
8/26/05		2	2	C3	Cyclone/Filter/Debris	20.8		P
8/26/05		3	2	C3	Cyclone/Filter/Debris	20.8		P
8/26/05		4	2	C3	Cyclone/Filter/Debris	17.4		P
8/26/05		5	2	C3	Cyclone/Filter/Debris	17.4		P
8/26/05		6	2	C3	Cyclone/Filter/Debris	17.4		P
8/26/05		7	2	C3	Cyclone/Filter/Debris	17.4		P
8/26/05		8	2	C3	Cyclone/Filter/Debris	20.8		P
8/26/05		9	2	C3	Cyclone/Filter/Debris	20.8		P
8/26/05		10	2	C3	Cyclone/Filter/Debris	20.8		P
8/26/05		1	2	D1	Cyclone/Filter/Debris	20.8		P
8/26/05		2	2	D1	Cyclone/Filter/Debris	27.8		P
8/26/05		3	2	D1	Cyclone/Filter/Debris	27.8		P
8/26/05		4	2	D1	Cyclone/Filter/Debris	20.8		P
8/26/05		5	2	D1	Cyclone/Filter/Debris	20.8		P
8/26/05		6	2	D1	Cyclone/Filter/Debris	20.8		P
8/26/05		7	2	D1	Cyclone/Filter/Debris	20.8		P
8/26/05		8	2	D1	Cyclone/Filter/Debris	20.8		P
8/26/05		9	2	D1	Cyclone/Filter/Debris	27.8		P
8/26/05		10	2	D1	Cyclone/Filter/Debris	24.3		P
8/26/05		1	2	D2	Cyclone/Filter/Debris	27.8		P
8/26/05		2	2	D2	Cyclone/Filter/Debris	27.8		P
8/26/05		3	2	D2	Cyclone/Filter/Debris	20.8		P
8/26/05		4	2	D2	Cyclone/Filter/Debris	17.4		P
8/26/05		5	2	D2	Cyclone/Filter/Debris	20.8		P
8/26/05		6	2	D2	Cyclone/Filter/Debris	20.8		P
8/26/05		7	2	D2	Cyclone/Filter/Debris	27.8		P
8/26/05		8	2	D2	Cyclone/Filter/Debris	20.8		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
8/26/05		9	2	D2	Cyclone/Filter/Debris	20.8		P
8/26/05		10	2	D2	Cyclone/Filter/Debris	20.8		P
8/26/05		1	2	D3	Cyclone/Filter/Debris	20.8		P
8/26/05		2	2	D3	Cyclone/Filter/Debris	20.8		P
8/26/05		3	2	D3	Cyclone/Filter/Debris	27.8		P
8/26/05		4	2	D3	Cyclone/Filter/Debris	24.3		P
8/26/05		5	2	D3	Cyclone/Filter/Debris	17.4		P
8/26/05		6	2	D3	Cyclone/Filter/Debris	17.4		P
8/26/05		7	2	D3	Cyclone/Filter/Debris	20.8		P
8/26/05		8	2	D3	Cyclone/Filter/Debris	27.8		P
8/26/05		9	2	D3	Cyclone/Filter/Debris	27.8		P
8/26/05		10	2	D3	Cyclone/Filter/Debris	27.8		P
8/26/05		1	2	E1	Cyclone/Filter/Debris	17.4		P
8/26/05		2	2	E1	Cyclone/Filter/Debris	20.8		P
8/26/05		3	2	E1	Cyclone/Filter/Debris	20.8		P
8/26/05		4	2	E1	Cyclone/Filter/Debris	24.3		P
8/26/05		5	2	E1	Cyclone/Filter/Debris	27.8		P
8/26/05		6	2	E1	Cyclone/Filter/Debris	27.8		P
8/26/05		7	2	E1	Cyclone/Filter/Debris	27.8		P
8/26/05		8	2	E1	Cyclone/Filter/Debris	34.7		P
8/26/05		9	2	E1	Cyclone/Filter/Debris	17.4		P
8/26/05		10	2	E1	Cyclone/Filter/Debris	20.8		P
8/26/05		1	2	E2	Cyclone/Filter/Debris	20.8		P
8/26/05		2	2	E2	Cyclone/Filter/Debris	20.8		P
8/26/05		3	2	E2	Cyclone/Filter/Debris	20.8		P
8/26/05		4	2	E2	Cyclone/Filter/Debris	20.8		P
8/26/05		5	2	E2	Cyclone/Filter/Debris	20.8		P
8/26/05		6	2	E2	Cyclone/Filter/Debris	17.4		P
8/26/05		7	2	E2	Cyclone/Filter/Debris	17.4		P
8/26/05		8	2	E2	Cyclone/Filter/Debris	17.4		P
8/26/05		9	2	E2	Cyclone/Filter/Debris	17.4		P
8/26/05		10	2	E2	Cyclone/Filter/Debris	20.8		P
8/26/05		1	2	E3	Cyclone/Filter/Debris	20.8		P
8/26/05		2	2	E3	Cyclone/Filter/Debris	20.8		P
8/26/05		3	2	E3	Cyclone/Filter/Debris	20.8		P
8/26/05		4	2	E3	Cyclone/Filter/Debris	24.3		P
8/26/05		5	2	E3	Cyclone/Filter/Debris	27.8		P
8/26/05		6	2	E3	Cyclone/Filter/Debris	27.8		P
8/26/05		7	2	E3	Cyclone/Filter/Debris	27.8		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
8/26/05		8	2	E3	Cyclone/Filter/Debris	27.8		P
8/26/05		9	2	E3	Cyclone/Filter/Debris	24.3		P
8/26/05		10	2	E3	Cyclone/Filter/Debris	20.8		P
10/10/05	B4	1	1		Sand/Filter	20.8		P
10/10/05	B4	2	1		Sand/Filter	24.3		P
10/10/05	B4	3	1		Sand/Filter	27.8		P
10/10/05	B4	4	1		Sand/Filter	20.8		P
10/10/05	B4	5	1		Sand/Filter	20.8		P
10/10/05	B4	6	1		Sand/Filter	24.3		P
10/10/05	B4	7	1		Sand/Filter	20.8		P
10/10/05	B4	8	1		Sand/Filter	24.3		P
10/10/05	B4	9	1		Sand/Filter	24.3		P
10/10/05	B4	10	1		Sand/Filter	27.8		P
10/10/05	C4	1	1		Sand/Filter	27.8		P
10/10/05	C4	2	1		Sand/Filter	27.8		P
10/10/05	C4	3	1		Sand/Filter	27.8		P
10/10/05	C4	4	1		Sand/Filter	27.8		P
10/10/05	C4	5	1		Sand/Filter	34.7		P
10/10/05	C4	6	1		Sand/Filter	24.3		P
10/10/05	C4	7	1		Sand/Filter	20.8		P
10/10/05	C4	8	1		Sand/Filter	20.8		P
10/10/05	C4	9	1		Sand/Filter	20.8		P
10/10/05	C4	10	1		Sand/Filter	20.8		P
10/10/05	D4	1	1		Sand/Filter	20.8		P
10/10/05	D4	2	1		Sand/Filter	24.3		P
10/10/05	D4	3	1		Sand/Filter	24.3		P
10/10/05	D4	4	1		Sand/Filter	27.8		P
10/10/05	D4	5	1		Sand/Filter	34.7		P
10/10/05	D4	6	1		Sand/Filter	27.8		P
10/10/05	D4	7	1		Sand/Filter	34.7		P
10/10/05	D4	8	1		Sand/Filter	20.8		P
10/10/05	D4	9	1		Sand/Filter	20.8		P
10/10/05	D4	10	1		Sand/Filter	20.8		P
10/10/05	E4	1	1		Filtercake/Sand	20.8		P
10/10/05	E4	2	1		Filtercake/Sand	24.3		P
10/10/05	E4	3	1		Filtercake/Sand	24.3		P
10/10/05	E4	4	1		Filtercake/Sand	27.8		P
10/10/05	E4	5	1		Filtercake/Sand	27.8		P
10/10/05	E4	6	1		Filtercake/Sand	34.7		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
10/10/05	E4	7	1		Filtercake/Sand	38.2		P
10/10/05	E4	8	1		Filtercake/Sand	24.3		P
10/10/05	E4	9	1		Filtercake/Sand	20.8		P
10/10/05	E4	10	1		Filtercake/Sand	27.8		P
10/10/05	F4	1	1		Filtercake/Sand	27.8		P
10/10/05	F4	2	1		Filtercake/Sand	34.7		P
10/10/05	F4	3	1		Filtercake/Sand	34.7		P
10/10/05	F4	4	1		Filtercake/Sand	27.8		P
10/10/05	F4	5	1		Filtercake/Sand	27.8		P
10/10/05	F4	6	1		Filtercake/Sand	27.8		P
10/10/05	F4	7	1		Filtercake/Sand	27.8		P
10/10/05	F4	8	1		Filtercake/Sand	27.8		P
10/10/05	F4	9	1		Filtercake/Sand	27.8		P
10/10/05	F4	10	1		Filtercake/Sand	27.8		P
10/10/05	G4	1	1		Filtercake/Sand	38.2		P
10/10/05	G4	2	1		Filtercake/Sand	20.8		P
10/10/05	G4	3	1		Filtercake/Sand	20.8		P
10/10/05	G4	4	1		Filtercake/Sand	20.8		P
10/10/05	G4	5	1		Filtercake/Sand	20.8		P
10/10/05	G4	6	1		Filtercake/Sand	24.3		P
10/10/05	G4	7	1		Filtercake/Sand	24.3		P
10/10/05	G4	8	1		Filtercake/Sand	27.8		P
10/10/05	G4	9	1		Filtercake/Sand	27.8		P
10/10/05	G4	10	1		Filtercake/Sand	34.7		P
10/10/05	H4	1	1		Filtercake/Sand	27.8		P
10/10/05	H4	2	1		Filtercake/Sand	20.8		P
10/10/05	H4	3	1		Filtercake/Sand	20.8		P
10/10/05	H4	4	1		Filtercake/Sand	20.8		P
10/10/05	H4	5	1		Filtercake/Sand	20.8		P
10/10/05	H4	6	1		Filtercake/Sand	27.8		P
10/10/05	H4	7	1		Filtercake/Sand	27.8		P
10/10/05	H4	8	1		Filtercake/Sand	27.8		P
10/10/05	H4	9	1		Filtercake/Sand	20.8		P
10/10/05	H4	10	1		Filtercake/Sand	20.8		P
10/10/05	H5	1	1		Filtercake/Sand	20.8		P
10/10/05	H5	2	1		Filtercake/Sand	27.8		P
10/10/05	H5	3	1		Filtercake/Sand	24.3		P
10/10/05	H5	4	1		Filtercake/Sand	20.8		P
10/10/05	H5	5	1		Filtercake/Sand	20.8		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
10/10/05	H5	6	1		Filtercake/Sand	27.8		P
10/10/05	H5	7	1		Filtercake/Sand	27.8		P
10/10/05	H5	8	1		Filtercake/Sand	24.3		P
10/10/05	H5	9	1		Filtercake/Sand	20.8		P
10/10/05	H5	10	1		Filtercake/Sand	20.8		P
10/10/05	G5	1	1		Filtercake/Sand	27.8		P
10/10/05	G5	2	1		Filtercake/Sand	24.3		P
10/10/05	G5	3	1		Filtercake/Sand	20.8		P
10/10/05	G5	4	1		Filtercake/Sand	20.8		P
10/10/05	G5	5	1		Filtercake/Sand	20.8		P
10/10/05	G5	6	1		Filtercake/Sand	20.8		P
10/10/05	G5	7	1		Filtercake/Sand	27.8		P
10/10/05	G5	8	1		Filtercake/Sand	24.3		P
10/10/05	G5	9	1		Filtercake/Sand	24.3		P
10/10/05	G5	10	1		Filtercake/Sand	20.8		P
10/10/05	F5	1	1		Filtercake/Sand	20.8		P
10/10/05	F5	2	1		Filtercake/Sand	20.8		P
10/10/05	F5	3	1		Filtercake/Sand	20.8		P
10/10/05	F5	4	1		Filtercake/Sand	20.8		P
10/10/05	F5	5	1		Filtercake/Sand	27.8		P
10/10/05	F5	6	1		Filtercake/Sand	27.8		P
10/10/05	F5	7	1		Filtercake/Sand	24.3		P
10/10/05	F5	8	1		Filtercake/Sand	20.8		P
10/10/05	F5	9	1		Filtercake/Sand	20.8		P
10/10/05	F5	10	1		Filtercake/Sand	27.8		P
10/10/05	E5	1	1		Filtercake/Sand	27.8		P
10/10/05	E5	2	1		Filtercake/Sand	27.8		P
10/10/05	E5	3	1		Filtercake/Sand	24.3		P
10/10/05	E5	4	1		Filtercake/Sand	24.3		P
10/10/05	E5	5	1		Filtercake/Sand	24.3		P
10/10/05	E5	6	1		Filtercake/Sand	20.8		P
10/10/05	E5	7	1		Filtercake/Sand	24.3		P
10/10/05	E5	8	1		Filtercake/Sand	27.8		P
10/10/05	E5	9	1		Filtercake/Sand	34.7		P
10/10/05	E5	10	1		Filtercake/Sand	34.7		P
10/10/05	D5	1	1		Filtercake/Sand	27.8		P
10/10/05	D5	2	1		Filtercake/Sand	20.8		P
10/10/05	D5	3	1		Filtercake/Sand	20.8		P
10/10/05	D5	4	1		Filtercake/Sand	20.8		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
10/10/05	D5	5	1		Filtercake/Sand	17.4		P
10/10/05	D5	6	1		Filtercake/Sand	20.8		P
10/10/05	D5	7	1		Filtercake/Sand	20.8		P
10/10/05	D5	8	1		Filtercake/Sand	27.8		P
10/10/05	D5	9	1		Filtercake/Sand	20.8		P
10/10/05	D5	10	1		Filtercake/Sand	20.8		P
10/10/05	C5	1	1		Filtercake/Sand	20.8		P
10/10/05	C5	2	1		Filtercake/Sand	20.8		P
10/10/05	C5	3	1		Filtercake/Sand	20.8		P
10/10/05	C5	4	1		Filtercake/Sand	20.8		P
10/10/05	C5	5	1		Filtercake/Sand	20.8		P
10/10/05	C5	6	1		Filtercake/Sand	20.8		P
10/10/05	C5	7	1		Filtercake/Sand	20.8		P
10/10/05	C5	8	1		Filtercake/Sand	20.8		P
10/10/05	C5	9	1		Filtercake/Sand	17.4		P
10/10/05	C5	10	1		Filtercake/Sand	27.8		P
10/10/05	B5	1	1		Filtercake/Sand	24.3		P
10/10/05	B5	2	1		Filtercake/Sand	27.8		P
10/10/05	B5	3	1		Filtercake/Sand	27.8		P
10/10/05	B5	4	1		Filtercake/Sand	27.8		P
10/10/05	B5	5	1		Filtercake/Sand	34.7		P
10/10/05	B5	6	1		Filtercake/Sand	24.3		P
10/10/05	B5	7	1		Filtercake/Sand	24.3		P
10/10/05	B5	8	1		Filtercake/Sand	24.3		P
10/10/05	B5	9	1		Filtercake/Sand	27.8		P
10/10/05	B5	10	1		Filtercake/Sand	27.8		P
10/10/05	A3	1	1		Filtercake/Sand	27.8		P
10/10/05	A3	2	1		Filtercake/Sand	20.8		P
10/10/05	A3	3	1		Filtercake/Sand	20.8		P
10/10/05	A3	4	1		Filtercake/Sand	27.8		P
10/10/05	A3	5	1		Filtercake/Sand	27.8		P
10/10/05	A3	6	1		Filtercake/Sand	20.8		P
10/10/05	A3	7	1		Filtercake/Sand	17.4		P
10/10/05	A3	8	1		Filtercake/Sand	20.8		P
10/10/05	A3	9	1		Filtercake/Sand	20.8		P
10/10/05	A3	10	1		Filtercake/Sand	20.8		P
10/10/05	A2	1	1		Filtercake/Sand	38.2		P
10/10/05	A2	2	1		Filtercake/Sand	20.8		P
10/10/05	A2	3	1		Filtercake/Sand	24.3		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
10/10/05	A2	4	1		Filtercake/Sand	20.8		P
10/10/05	A2	5	1		Filtercake/Sand	27.8		P
10/10/05	A2	6	1		Filtercake/Sand	20.8		P
10/10/05	A2	7	1		Filtercake/Sand	17.4		P
10/10/05	A2	8	1		Filtercake/Sand	20.8		P
10/10/05	A2	9	1		Filtercake/Sand	27.8		P
10/10/05	A2	10	1		Filtercake/Sand	27.8		P
10/11/05	B4	1	2		Filter/Sand/Debris	17.4		P
10/11/05	B4	2	2		Filter/Sand/Debris	20.8		P
10/11/05	B4	3	2		Filter/Sand/Debris	17.4		P
10/11/05	B4	4	2		Filter/Sand/Debris	20.8		P
10/11/05	B4	5	2		Filter/Sand/Debris	20.8		P
10/11/05	B4	6	2		Filter/Sand/Debris	24.3		P
10/11/05	B4	7	2		Filter/Sand/Debris	20.8		P
10/11/05	B4	8	2		Filter/Sand/Debris	20.8		P
10/11/05	B4	9	2		Filter/Sand/Debris	27.8		P
10/11/05	B4	10	2		Filter/Sand/Debris	27.8		P
10/11/05	B5	1	2		Filter/Sand/Debris	20.8		P
10/11/05	B5	2	2		Filter/Sand/Debris	24.3		P
10/11/05	B5	3	2		Filter/Sand/Debris	24.3		P
10/11/05	B5	4	2		Filter/Sand/Debris	20.8		P
10/11/05	B5	5	2		Filter/Sand/Debris	27.8		P
10/11/05	B5	6	2		Filter/Sand/Debris	27.8		P
10/11/05	B5	7	2		Filter/Sand/Debris	20.8		P
10/11/05	B5	8	2		Filter/Sand/Debris	17.4		P
10/11/05	B5	9	2		Filter/Sand/Debris	20.8		P
10/11/05	B5	10	2		Filter/Sand/Debris	20.8		P
10/11/05	C4	1	2		Filter/Sand/Debris	20.8		P
10/11/05	C4	2	2		Filter/Sand/Debris	20.8		P
10/11/05	C4	3	2		Filter/Sand/Debris	27.8		P
10/11/05	C4	4	2		Filter/Sand/Debris	24.3		P
10/11/05	C4	5	2		Filter/Sand/Debris	20.8		P
10/11/05	C4	6	2		Filter/Sand/Debris	20.8		P
10/11/05	C4	7	2		Filter/Sand/Debris	24.3		P
10/11/05	C4	8	2		Filter/Sand/Debris	27.8		P
10/11/05	C4	9	2		Filter/Sand/Debris	27.8		P
10/11/05	C4	10	2		Filter/Sand/Debris	20.8		P
10/11/05	C5	1	2		Filter/Sand/Debris	27.8		P
10/11/05	C5	2	2		Filter/Sand/Debris	34.7		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
10/11/05	C5	3	2		Filter/Sand/Debris	27.8		P
10/11/05	C5	4	2		Filter/Sand/Debris	24.3		P
10/11/05	C5	5	2		Filter/Sand/Debris	27.8		P
10/11/05	C5	6	2		Filter/Sand/Debris	20.8		P
10/11/05	C5	7	2		Filter/Sand/Debris	20.8		P
10/11/05	C5	8	2		Filter/Sand/Debris	24.3		P
10/11/05	C5	9	2		Filter/Sand/Debris	20.8		P
10/11/05	C5	10	2		Filter/Sand/Debris	27.8		P
10/11/05	D4	1	2		Filter/Sand/Debris	20.8		P
10/11/05	D4	2	2		Filter/Sand/Debris	20.8		P
10/11/05	D4	3	2		Filter/Sand/Debris	20.8		P
10/11/05	D4	4	2		Filter/Sand/Debris	24.3		P
10/11/05	D4	5	2		Filter/Sand/Debris	27.8		P
10/11/05	D4	6	2		Filter/Sand/Debris	20.8		P
10/11/05	D4	7	2		Filter/Sand/Debris	24.3		P
10/11/05	D4	8	2		Filter/Sand/Debris	24.3		P
10/11/05	D4	9	2		Filter/Sand/Debris	27.8		P
10/11/05	D4	10	2		Filter/Sand/Debris	34.7		P
10/11/05	D5	1	2		Filter/Sand/Debris	34.7		P
10/11/05	D5	2	2		Filter/Sand/Debris	27.8		P
10/11/05	D5	3	2		Filter/Sand/Debris	24.3		P
10/11/05	D5	4	2		Filter/Sand/Debris	24.3		P
10/11/05	D5	5	2		Filter/Sand/Debris	24.3		P
10/11/05	D5	6	2		Filter/Sand/Debris	20.8		P
10/11/05	D5	7	2		Filter/Sand/Debris	24.3		P
10/11/05	D5	8	2		Filter/Sand/Debris	20.8		P
10/11/05	D5	9	2		Filter/Sand/Debris	20.8		P
10/11/05	D5	10	2		Filter/Sand/Debris	24.3		P
10/11/05	E4	1	2		Filter/Sand/Debris	20.8		P
10/11/05	E4	2	2		Filter/Sand/Debris	20.8		P
10/11/05	E4	3	2		Filter/Sand/Debris	27.8		P
10/11/05	E4	4	2		Filter/Sand/Debris	27.8		P
10/11/05	E4	5	2		Filter/Sand/Debris	24.3		P
10/11/05	E4	6	2		Filter/Sand/Debris	27.8		P
10/11/05	E4	7	2		Filter/Sand/Debris	34.7		P
10/11/05	E4	8	2		Filter/Sand/Debris	34.7		P
10/11/05	E4	9	2		Filter/Sand/Debris	34.7		P
10/11/05	E4	10	2		Filter/Sand/Debris	20.8		P
10/11/05	E5	1	2		Filter/Sand/Debris	17.4		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
10/11/05	E5	2	2		Filter/Sand/Debris	17.4		P
10/11/05	E5	3	2		Filter/Sand/Debris	20.8		P
10/11/05	E5	4	2		Filter/Sand/Debris	20.8		P
10/11/05	E5	5	2		Filter/Sand/Debris	20.8		P
10/11/05	E5	6	2		Filter/Sand/Debris	27.8		P
10/11/05	E5	7	2		Filter/Sand/Debris	20.8		P
10/11/05	E5	8	2		Filter/Sand/Debris	24.3		P
10/11/05	E5	9	2		Filter/Sand/Debris	24.3		P
10/11/05	E5	10	2		Filter/Sand/Debris	20.8		P
10/11/05	F4	1	2		Filter/Sand/Debris	20.8		P
10/11/05	F4	2	2		Filter/Sand/Debris	20.8		P
10/11/05	F4	3	2		Filter/Sand/Debris	20.8		P
10/11/05	F4	4	2		Filter/Sand/Debris	20.8		P
10/11/05	F4	5	2		Filter/Sand/Debris	27.8		P
10/11/05	F4	6	2		Filter/Sand/Debris	27.8		P
10/11/05	F4	7	2		Filter/Sand/Debris	38.2		P
10/11/05	F4	8	2		Filter/Sand/Debris	20.8		P
10/11/05	F4	9	2		Filter/Sand/Debris	24.3		P
10/11/05	F4	10	2		Filter/Sand/Debris	24.3		P
10/11/05	F5	1			Filter/Sand/Debris	24.3		P
10/11/05	F5	2			Filter/Sand/Debris	27.8		P
10/11/05	F5	3			Filter/Sand/Debris	27.8		P
10/11/05	F5	4			Filter/Sand/Debris	20.8		P
10/11/05	F5	5			Filter/Sand/Debris	27.8		P
10/11/05	F5	6			Filter/Sand/Debris	17.4		P
10/11/05	F5	7			Filter/Sand/Debris	17.4		P
10/11/05	F5	8			Filter/Sand/Debris	20.8		P
10/11/05	F5	9			Filter/Sand/Debris	34.7		P
10/11/05	F5	10			Filter/Sand/Debris	38.2		P
10/11/05	G4	1			Filter/Sand/Debris	20.8		P
10/11/05	G4	2			Filter/Sand/Debris	20.8		P
10/11/05	G4	3			Filter/Sand/Debris	20.8		P
10/11/05	G4	4			Filter/Sand/Debris	17.4		P
10/11/05	G4	5			Filter/Sand/Debris	17.4		P
10/11/05	G4	6			Filter/Sand/Debris	27.8		P
10/11/05	G4	7			Filter/Sand/Debris	17.4		P
10/11/05	G4	8			Filter/Sand/Debris	24.3		P
10/11/05	G4	9			Filter/Sand/Debris	34.7		P
10/11/05	G4	10			Filter/Sand/Debris	27.8		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
10/11/05	G5	1			Filter/Sand/Debris	27.8		P
10/11/05	G5	2			Filter/Sand/Debris	27.8		P
10/11/05	G5	3			Filter/Sand/Debris	27.8		P
10/11/05	G5	4			Filter/Sand/Debris	34.7		P
10/11/05	G5	5			Filter/Sand/Debris	24.3		P
10/11/05	G5	6			Filter/Sand/Debris	34.7		P
10/11/05	G5	7			Filter/Sand/Debris	20.8		P
10/11/05	G5	8			Filter/Sand/Debris	17.4		P
10/11/05	G5	9			Filter/Sand/Debris	17.4		P
10/11/05	G5	10			Filter/Sand/Debris	24.3		P
10/11/05	H4	1	2		Filter/Sand/Debris	17.4		P
10/11/05	H4	2	2		Filter/Sand/Debris	20.8		P
10/11/05	H4	3	2		Filter/Sand/Debris	20.8		P
10/11/05	H4	4	2		Filter/Sand/Debris	20.8		P
10/11/05	H4	5	2		Filter/Sand/Debris	24.3		P
10/11/05	H4	6	2		Filter/Sand/Debris	20.8		P
10/11/05	H4	7	2		Filter/Sand/Debris	27.8		P
10/11/05	H4	8	2		Filter/Sand/Debris	20.8		P
10/11/05	H4	9	2		Filter/Sand/Debris	20.8		P
10/11/05	H4	10	2		Filter/Sand/Debris	27.8		P
10/11/05	H5	1	2		Filter/Sand/Debris	20.8		P
10/11/05	H5	2	2		Filter/Sand/Debris	27.8		P
10/11/05	H5	3	2		Filter/Sand/Debris	27.8		P
10/11/05	H5	4	2		Filter/Sand/Debris	17.4		P
10/11/05	H5	5	2		Filter/Sand/Debris	20.8		P
10/11/05	H5	6	2		Filter/Sand/Debris	20.8		P
10/11/05	H5	7	2		Filter/Sand/Debris	24.3		P
10/11/05	H5	8	2		Filter/Sand/Debris	20.8		P
10/11/05	H5	9	2		Filter/Sand/Debris	27.8		P
10/11/05	H5	10	2		Filter/Sand/Debris	27.8		P
10/11/05	A1	1	2		Filter/Sand/Debris	24.3		P
10/11/05	A1	2	2		Filter/Sand/Debris	27.8		P
10/11/05	A1	3	2		Filter/Sand/Debris	34.7		P
10/11/05	A1	4	2		Filter/Sand/Debris	20.8		P
10/11/05	A1	5	2		Filter/Sand/Debris	20.8		P
10/11/05	A1	6	2		Filter/Sand/Debris	24.3		P
10/11/05	A1	7	2		Filter/Sand/Debris	20.8		P
10/11/05	A1	8	2		Filter/Sand/Debris	20.8		P
10/11/05	A1	9	2		Filter/Sand/Debris	27.8		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
10/11/05	A1	10	2		Filter/Sand/Debris	27.8		P
10/11/05	A2	1	2		Filter/Sand/Debris	20.8		P
10/11/05	A2	2	2		Filter/Sand/Debris	27.8		P
10/11/05	A2	3	2		Filter/Sand/Debris	24.3		P
10/11/05	A2	4	2		Filter/Sand/Debris	24.3		P
10/11/05	A2	5	2		Filter/Sand/Debris	20.8		P
10/11/05	A2	6	2		Filter/Sand/Debris	20.8		P
10/11/05	A2	7	2		Filter/Sand/Debris	27.8		P
10/11/05	A2	8	2		Filter/Sand/Debris	34.7		P
10/11/05	A2	9	2		Filter/Sand/Debris	17.4		P
10/11/05	A2	10	2		Filter/Sand/Debris	20.8		P
10/11/05	A3	1	2		Filter/Sand/Debris	20.8		P
10/11/05	A3	2	2		Filter/Sand/Debris	27.8		P
10/11/05	A3	3	2		Filter/Sand/Debris	24.3		P
10/11/05	A3	4	2		Filter/Sand/Debris	27.8		P
10/11/05	A3	5	2		Filter/Sand/Debris	20.8		P
10/11/05	A3	6	2		Filter/Sand/Debris	17.4		P
10/11/05	A3	7	2		Filter/Sand/Debris	17.4		P
10/11/05	A3	8	2		Filter/Sand/Debris	20.8		P
10/11/05	A3	9	2		Filter/Sand/Debris	27.8		P
10/11/05	A3	10	2		Filter/Sand/Debris	34.7		P
10/11/05	A4	1	2		Filter/Sand/Debris	34.7		P
10/11/05	A4	2	2		Filter/Sand/Debris	27.8		P
10/11/05	A4	3	2		Filter/Sand/Debris	27.8		P
10/11/05	A4	4	2		Filter/Sand/Debris	17.4		P
10/11/05	A4	5	2		Filter/Sand/Debris	20.8		P
10/11/05	A4	6	2		Filter/Sand/Debris	24.3		P
10/11/05	A4	7	2		Filter/Sand/Debris	27.8		P
10/11/05	A4	8	2		Filter/Sand/Debris	27.8		P
10/11/05	A4	9	2		Filter/Sand/Debris	38.2		P
10/11/05	A4	10	2		Filter/Sand/Debris	38.2		P
10/11/05	B1	1	2		Filter/Sand/Debris	20.8		P
10/11/05	B1	2	2		Filter/Sand/Debris	20.8		P
10/11/05	B1	3	2		Filter/Sand/Debris	20.8		P
10/11/05	B1	4	2		Filter/Sand/Debris	27.8		P
10/11/05	B1	5	2		Filter/Sand/Debris	31.3		P
10/11/05	B1	6	2		Filter/Sand/Debris	31.3		P
10/11/05	B1	7	2		Filter/Sand/Debris	34.7		P
10/11/05	B1	8	2		Filter/Sand/Debris	24.3		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
10/11/05	B1	9	2		Filter/Sand/Debris	27.8		P
10/11/05	B1	10	2		Filter/Sand/Debris	27.8		P
10/11/05	C1	1	2		Filter/Sand/Debris	34.7		P
10/11/05	C1	2	2		Filter/Sand/Debris	20.8		P
10/11/05	C1	3	2		Filter/Sand/Debris	20.8		P
10/11/05	C1	4	2		Filter/Sand/Debris	20.8		P
10/11/05	C1	5	2		Filter/Sand/Debris	27.8		P
10/11/05	C1	6	2		Filter/Sand/Debris	31.3		P
10/11/05	C1	7	2		Filter/Sand/Debris	20.8		P
10/11/05	C1	8	2		Filter/Sand/Debris	20.8		P
10/11/05	C1	9	2		Filter/Sand/Debris	17.4		P
10/11/05	C1	10	2		Filter/Sand/Debris	20.8		P
10/11/05	D1	1	2		Filter/Sand/Debris	24.3		P
10/11/05	D1	2	2		Filter/Sand/Debris	34.7		P
10/11/05	D1	3	2		Filter/Sand/Debris	31.3		P
10/11/05	D1	4	2		Filter/Sand/Debris	20.8		P
10/11/05	D1	5	2		Filter/Sand/Debris	27.8		P
10/11/05	D1	6	2		Filter/Sand/Debris	17.4		P
10/11/05	D1	7	2		Filter/Sand/Debris	20.8		P
10/11/05	D1	8	2		Filter/Sand/Debris	24.3		P
10/11/05	D1	9	2		Filter/Sand/Debris	20.8		P
10/11/05	D1	10	2		Filter/Sand/Debris	20.8		P
10/11/05	E1	1	2		Filter/Sand/Debris	20.8		P
10/11/05	E1	2	2		Filter/Sand/Debris	17.4		P
10/11/05	E1	3	2		Filter/Sand/Debris	24.3		P
10/11/05	E1	4	2		Filter/Sand/Debris	24.3		P
10/11/05	E1	5	2		Filter/Sand/Debris	24.3		P
10/11/05	E1	6	2		Filter/Sand/Debris	20.8		P
10/11/05	E1	7	2		Filter/Sand/Debris	20.8		P
10/11/05	E1	8	2		Filter/Sand/Debris	20.8		P
10/11/05	E1	9	2		Filter/Sand/Debris	34.7		P
10/11/05	E1	10	2		Filter/Sand/Debris	34.7		P
10/11/05	F1	1	2		Filter/Sand/Debris	24.3		P
10/11/05	F1	2	2		Filter/Sand/Debris	27.8		P
10/11/05	F1	3	2		Filter/Sand/Debris	20.8		P
10/11/05	F1	4	2		Filter/Sand/Debris	24.3		P
10/11/05	F1	5	2		Filter/Sand/Debris	17.4		P
10/11/05	F1	6	2		Filter/Sand/Debris	24.3		P
10/11/05	F1	7	2		Filter/Sand/Debris	20.8		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
10/11/05	F1	8	2		Filter/Sand/Debris	27.8		P
10/11/05	F1	9	2		Filter/Sand/Debris	20.8		P
10/11/05	F1	10	2		Filter/Sand/Debris	20.8		P
10/11/05	G1	1	2		Filter/Sand/Debris	20.8		P
10/11/05	G1	2	2		Filter/Sand/Debris	20.8		P
10/11/05	G1	3	2		Filter/Sand/Debris	20.8		P
10/11/05	G1	4	2		Filter/Sand/Debris	20.8		P
10/11/05	G1	5	2		Filter/Sand/Debris	27.8		P
10/11/05	G1	6	2		Filter/Sand/Debris	24.3		P
10/11/05	G1	7	2		Filter/Sand/Debris	31.3		P
10/11/05	G1	8	2		Filter/Sand/Debris	20.8		P
10/11/05	G1	9	2		Filter/Sand/Debris	24.3		P
10/11/05	G1	10	2		Filter/Sand/Debris	24.3		P
10/12/05	A1	1	3		Filter/Sand/Debris	27.8		P
10/12/05	A1	2	3		Filter/Sand/Debris	27.8		P
10/12/05	A1	3	3		Filter/Sand/Debris	24.3		P
10/12/05	A1	4	3		Filter/Sand/Debris	27.8		P
10/12/05	A1	5	3		Filter/Sand/Debris	20.8		P
10/12/05	A1	6	3		Filter/Sand/Debris	27.8		P
10/12/05	A1	7	3		Filter/Sand/Debris	34.7		P
10/12/05	A1	8	3		Filter/Sand/Debris	31.3		P
10/12/05	A1	9	3		Filter/Sand/Debris	27.8		P
10/12/05	A1	10	3		Filter/Sand/Debris	20.8		P
10/12/05	A2	1	3		Filter/Sand/Debris	24.3		P
10/12/05	A2	2	3		Filter/Sand/Debris	20.8		P
10/12/05	A2	3	3		Filter/Sand/Debris	20.8		P
10/12/05	A2	4	3		Filter/Sand/Debris	27.8		P
10/12/05	A2	5	3		Filter/Sand/Debris	20.8		P
10/12/05	A2	6	3		Filter/Sand/Debris	20.8		P
10/12/05	A2	7	3		Filter/Sand/Debris	27.8		P
10/12/05	A2	8	3		Filter/Sand/Debris	31.3		P
10/12/05	A2	9	3		Filter/Sand/Debris	31.3		P
10/12/05	A2	10	3		Filter/Sand/Debris	24.3		P
10/12/05	A3	1	3		Filter/Sand/Debris	20.8		P
10/12/05	A3	2	3		Filter/Sand/Debris	20.8		P
10/12/05	A3	3	3		Filter/Sand/Debris	20.8		P
10/12/05	A3	4	3		Filter/Sand/Debris	27.8		P
10/12/05	A3	5	3		Filter/Sand/Debris	20.8		P
10/12/05	A3	6	3		Filter/Sand/Debris	20.8		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
10/12/05	A3	7	3		Filter/Sand/Debris	27.8		P
10/12/05	A3	8	3		Filter/Sand/Debris	27.8		P
10/12/05	A3	9	3		Filter/Sand/Debris	24.3		P
10/12/05	A3	10	3		Filter/Sand/Debris	24.3		P
10/12/05	A4	1	3		Filter/Sand/Debris	20.8		P
10/12/05	A4	2	3		Filter/Sand/Debris	20.8		P
10/12/05	A4	3	3		Filter/Sand/Debris	24.3		P
10/12/05	A4	4	3		Filter/Sand/Debris	20.8		P
10/12/05	A4	5	3		Filter/Sand/Debris	20.8		P
10/12/05	A4	6	3		Filter/Sand/Debris	#VALUE!		P
10/12/05	A4	7	3		Filter/Sand/Debris	20.8		P
10/12/05	A4	8	3		Filter/Sand/Debris	24.3		P
10/12/05	A4	9	3		Filter/Sand/Debris	24.3		P
10/12/05	A4	10	3		Filter/Sand/Debris	24.3		P
10/12/05	B4	1	3		Filter/Sand/Debris	24.3		P
10/12/05	B4	2	3		Filter/Sand/Debris	20.8		P
10/12/05	B4	3	3		Filter/Sand/Debris	17.4		P
10/12/05	B4	4	3		Filter/Sand/Debris	20.8		P
10/12/05	B4	5	3		Filter/Sand/Debris	20.8		P
10/12/05	B4	6	3		Filter/Sand/Debris	20.8		P
10/12/05	B4	7	3		Filter/Sand/Debris	#VALUE!		P
10/12/05	B4	8	3		Filter/Sand/Debris	34.7		P
10/12/05	B4	9	3		Filter/Sand/Debris	34.7		P
10/12/05	B4	10	3		Filter/Sand/Debris	34.7		P
10/12/05	B5	1	3		Filter/Sand/Debris	24.3		P
10/12/05	B5	2	3		Filter/Sand/Debris	27.8		P
10/12/05	B5	3	3		Filter/Sand/Debris	20.8		P
10/12/05	B5	4	3		Filter/Sand/Debris	24.3		P
10/12/05	B5	5	3		Filter/Sand/Debris	27.8		P
10/12/05	B5	6	3		Filter/Sand/Debris	31.3		P
10/12/05	B5	7	3		Filter/Sand/Debris	20.8		P
10/12/05	B5	8	3		Filter/Sand/Debris	20.8		P
10/12/05	B5	9	3		Filter/Sand/Debris	27.8		P
10/12/05	B5	10	3		Filter/Sand/Debris	20.8		P
10/12/05	C4	1	3		Filter/Sand/Debris	20.8		P
10/12/05	C4	2	3		Filter/Sand/Debris	27.8		P
10/12/05	C4	3	3		Filter/Sand/Debris	27.8		P
10/12/05	C4	4	3		Filter/Sand/Debris	34.7		P
10/12/05	C4	5	3		Filter/Sand/Debris	24.3		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
10/12/05	C4	6	3		Filter/Sand/Debris	24.3		P
10/12/05	C4	7	3		Filter/Sand/Debris	20.8		P
10/12/05	C4	8	3		Filter/Sand/Debris	24.3		P
10/12/05	C4	9	3		Filter/Sand/Debris	27.8		P
10/12/05	C4	10	3		Filter/Sand/Debris	27.8		P
10/12/05	C5	1	3		Filter/Sand/Debris	27.8		P
10/12/05	C5	2	3		Filter/Sand/Debris	27.8		P
10/12/05	C5	3	3		Filter/Sand/Debris	27.8		P
10/12/05	C5	4	3		Filter/Sand/Debris	34.7		P
10/12/05	C5	5	3		Filter/Sand/Debris	38.2		P
10/12/05	C5	6	3		Filter/Sand/Debris	20.8		P
10/12/05	C5	7	3		Filter/Sand/Debris	20.8		P
10/12/05	C5	8	3		Filter/Sand/Debris	20.8		P
10/12/05	C5	9	3		Filter/Sand/Debris	20.8		P
10/12/05	C5	10	3		Filter/Sand/Debris	20.8		P
10/12/05	D5	1	3		Filter/Sand/Debris	20.8		P
10/12/05	D5	2	3		Filter/Sand/Debris	20.8		P
10/12/05	D5	3	3		Filter/Sand/Debris	24.3		P
10/12/05	D5	4	3		Filter/Sand/Debris	24.3		P
10/12/05	D5	5	3		Filter/Sand/Debris	27.8		P
10/12/05	D5	6	3		Filter/Sand/Debris	27.8		P
10/12/05	D5	7	3		Filter/Sand/Debris	27.8		P
10/12/05	D5	8	3		Filter/Sand/Debris	34.7		P
10/12/05	D5	9	3		Filter/Sand/Debris	27.8		P
10/12/05	D5	10	3		Filter/Sand/Debris	24.3		P
10/12/05	D4	1	3		Filter/Sand/Debris	27.8		P
10/12/05	D4	2	3		Filter/Sand/Debris	27.8		P
10/12/05	D4	3	3		Filter/Sand/Debris	34.7		P
10/12/05	D4	4	3		Filter/Sand/Debris	34.7		P
10/12/05	D4	5	3		Filter/Sand/Debris	24.3		P
10/12/05	D4	6	3		Filter/Sand/Debris	20.8		P
10/12/05	D4	7	3		Filter/Sand/Debris	17.4		P
10/12/05	D4	8	3		Filter/Sand/Debris	20.8		P
10/12/05	D4	9	3		Filter/Sand/Debris	20.8		P
10/12/05	D4	10	3		Filter/Sand/Debris	27.8		P
10/12/05	E4	1	3		Filter/Sand/Debris	27.8		P
10/12/05	E4	2	3		Filter/Sand/Debris	24.3		P
10/12/05	E4	3	3		Filter/Sand/Debris	27.8		P
10/12/05	E4	4	3		Filter/Sand/Debris	20.8		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
10/12/05	E4	5	3		Filter/Sand/Debris	20.8		P
10/12/05	E4	6	3		Filter/Sand/Debris	20.8		P
10/12/05	E4	7	3		Filter/Sand/Debris	20.8		P
10/12/05	E4	8	3		Filter/Sand/Debris	20.8		P
10/12/05	E4	9	3		Filter/Sand/Debris	27.8		P
10/12/05	E4	10	3		Filter/Sand/Debris	27.8		P
10/12/05	E5	1	3		Filter/Sand/Debris	20.8		P
10/12/05	E5	2	3		Filter/Sand/Debris	20.8		P
10/12/05	E5	3	3		Filter/Sand/Debris	24.3		P
10/12/05	E5	4	3		Filter/Sand/Debris	24.3		P
10/12/05	E5	5	3		Filter/Sand/Debris	24.3		P
10/12/05	E5	6	3		Filter/Sand/Debris	27.8		P
10/12/05	E5	7	3		Filter/Sand/Debris	27.8		P
10/12/05	E5	8	3		Filter/Sand/Debris	27.8		P
10/12/05	E5	9	3		Filter/Sand/Debris	27.8		P
10/12/05	E5	10	3		Filter/Sand/Debris	34.7		P
10/12/05	F5	1	3		Filter/Sand/Debris	20.8		P
10/12/05	F5	2	3		Filter/Sand/Debris	20.8		P
10/12/05	F5	3	3		Filter/Sand/Debris	20.8		P
10/12/05	F5	4	3		Filter/Sand/Debris	27.8		P
10/12/05	F5	5	3		Filter/Sand/Debris	27.8		P
10/12/05	F5	6	3		Filter/Sand/Debris	27.8		P
10/12/05	F5	7	3		Filter/Sand/Debris	27.8		P
10/12/05	F5	8	3		Filter/Sand/Debris	34.7		P
10/12/05	F5	9	3		Filter/Sand/Debris	20.8		P
10/12/05	F5	10	3		Filter/Sand/Debris	24.3		P
10/12/05	F4	1	3		Filter/Sand/Debris	17.4		P
10/12/05	F4	2	3		Filter/Sand/Debris	17.4		P
10/12/05	F4	3	3		Filter/Sand/Debris	34.7		P
10/12/05	F4	4	3		Filter/Sand/Debris	34.7		P
10/12/05	F4	5	3		Filter/Sand/Debris	27.8		P
10/12/05	F4	6	3		Filter/Sand/Debris	20.8		P
10/12/05	F4	7	3		Filter/Sand/Debris	24.3		P
10/12/05	F4	8	3		Filter/Sand/Debris	20.8		P
10/12/05	F4	9	3		Filter/Sand/Debris	27.8		P
10/12/05	F4	10	3		Filter/Sand/Debris	27.8		P
10/12/05	G5	1	3		Filter/Sand/Debris	20.8		P
10/12/05	G5	2	3		Filter/Sand/Debris	20.8		P
10/12/05	G5	3	3		Filter/Sand/Debris	20.8		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
10/12/05	G5	4	3		Filter/Sand/Debris	24.3		P
10/12/05	G5	5	3		Filter/Sand/Debris	24.3		P
10/12/05	G5	6	3		Filter/Sand/Debris	24.3		P
10/12/05	G5	7	3		Filter/Sand/Debris	27.8		P
10/12/05	G5	8	3		Filter/Sand/Debris	27.8		P
10/12/05	G5	9	3		Filter/Sand/Debris	34.7		P
10/12/05	G5	10	3		Filter/Sand/Debris	27.8		P
10/12/05	G4	1	3		Filter/Sand/Debris	27.8		P
10/12/05	G4	2	3		Filter/Sand/Debris	27.8		P
10/12/05	G4	3	3		Filter/Sand/Debris	38.2		P
10/12/05	G4	4	3		Filter/Sand/Debris	38.2		P
10/12/05	G4	5	3		Filter/Sand/Debris	24.3		P
10/12/05	G4	6	3		Filter/Sand/Debris	27.8		P
10/12/05	G4	7	3		Filter/Sand/Debris	20.8		P
10/12/05	G4	8	3		Filter/Sand/Debris	20.8		P
10/12/05	G4	9	3		Filter/Sand/Debris	24.3		P
10/12/05	G4	10	3		Filter/Sand/Debris	24.3		P
10/12/05	G1	1	3		Filter/Sand/Debris	20.8		P
10/12/05	G1	2	3		Filter/Sand/Debris	20.8		P
10/12/05	G1	3	3		Filter/Sand/Debris	17.4		P
10/12/05	G1	4	3		Filter/Sand/Debris	17.4		P
10/12/05	G1	5	3		Filter/Sand/Debris	20.8		P
10/12/05	G1	6	3		Filter/Sand/Debris	17.4		P
10/12/05	G1	7	3		Filter/Sand/Debris	20.8		P
10/12/05	G1	8	3		Filter/Sand/Debris	27.8		P
10/12/05	G1	9	3		Filter/Sand/Debris	27.8		P
10/12/05	G1	10	3		Filter/Sand/Debris	24.3		P
10/12/05	F1	1	3		Filter/Sand/Debris	20.8		P
10/12/05	F1	2	3		Filter/Sand/Debris	20.8		P
10/12/05	F1	3	3		Filter/Sand/Debris	20.8		P
10/12/05	F1	4	3		Filter/Sand/Debris	20.8		P
10/12/05	F1	5	3		Filter/Sand/Debris	20.8		P
10/12/05	F1	6	3		Filter/Sand/Debris	20.8		P
10/12/05	F1	7	3		Filter/Sand/Debris	20.8		P
10/12/05	F1	8	3		Filter/Sand/Debris	20.8		P
10/12/05	F1	9	3		Filter/Sand/Debris	20.8		P
10/12/05	F1	10	3		Filter/Sand/Debris	20.8		P
10/12/05	E1	1	3		Filter/Sand/Debris	24.3		P
10/12/05	E1	2	3		Filter/Sand/Debris	27.8		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
10/12/05	E1	3	3		Filter/Sand/Debris	27.8		P
10/12/05	E1	4	3		Filter/Sand/Debris	20.8		P
10/12/05	E1	5	3		Filter/Sand/Debris	20.8		P
10/12/05	E1	6	3		Filter/Sand/Debris	20.8		P
10/12/05	E1	7	3		Filter/Sand/Debris	27.8		P
10/12/05	E1	8	3		Filter/Sand/Debris	34.7		P
10/12/05	E1	9	3		Filter/Sand/Debris	34.7		P
10/12/05	E1	10	3		Filter/Sand/Debris	20.8		P
10/12/05	D1	1	3		Filter/Sand/Debris	20.8		P
10/12/05	D1	2	3		Filter/Sand/Debris	27.8		P
10/12/05	D1	3	3		Filter/Sand/Debris	20.8		P
10/12/05	D1	4	3		Filter/Sand/Debris	20.8		P
10/12/05	D1	5	3		Filter/Sand/Debris	27.8		P
10/12/05	D1	6	3		Filter/Sand/Debris	20.8		P
10/12/05	D1	7	3		Filter/Sand/Debris	24.3		P
10/12/05	D1	8	3		Filter/Sand/Debris	24.3		P
10/12/05	D1	9	3		Filter/Sand/Debris	20.8		P
10/12/05	D1	10	3		Filter/Sand/Debris	20.8		P
10/12/05	C1	1	3		Filter/Sand/Debris	20.8		P
10/12/05	C1	2	3		Filter/Sand/Debris	20.8		P
10/12/05	C1	3	3		Filter/Sand/Debris	20.8		P
10/12/05	C1	4	3		Filter/Sand/Debris	20.8		P
10/12/05	C1	5	3		Filter/Sand/Debris	27.8		P
10/12/05	C1	6	3		Filter/Sand/Debris	20.8		P
10/12/05	C1	7	3		Filter/Sand/Debris	17.4		P
10/12/05	C1	8	3		Filter/Sand/Debris	34.7		P
10/12/05	C1	9	3		Filter/Sand/Debris	27.8		P
10/12/05	C1	10	3		Filter/Sand/Debris	20.8		P
10/12/05	B1	1	3		Filter/Sand/Debris	38.2		P
10/12/05	B1	2	3		Filter/Sand/Debris	34.7		P
10/12/05	B1	3	3		Filter/Sand/Debris	34.7		P
10/12/05	B1	4	3		Filter/Sand/Debris	27.8		P
10/12/05	B1	5	3		Filter/Sand/Debris	17.4		P
10/12/05	B1	6	3		Filter/Sand/Debris	27.8		P
10/12/05	B1	7	3		Filter/Sand/Debris	27.8		P
10/12/05	B1	8	3		Filter/Sand/Debris	34.7		P
10/12/05	B1	9	3		Filter/Sand/Debris	27.8		P
10/12/05	B1	10	3		Filter/Sand/Debris	20.8		P
10/13/05	A1	1	4		Filter/Sand/Debris	20.8		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
10/13/05	A1	2	4		Filter/Sand/Debris	27.8		P
10/13/05	A1	3	4		Filter/Sand/Debris	20.8		P
10/13/05	A1	4	4		Filter/Sand/Debris	24.3		P
10/13/05	A1	5	4		Filter/Sand/Debris	17.4		P
10/13/05	A1	6	4		Filter/Sand/Debris	27.8		P
10/13/05	A1	7	4		Filter/Sand/Debris	34.7		P
10/13/05	A1	8	4		Filter/Sand/Debris	27.8		P
10/13/05	A1	9	4		Filter/Sand/Debris	20.8		P
10/13/05	A1	10	4		Filter/Sand/Debris	20.8		P
10/13/05	A2	1	4		Filter/Sand/Debris	27.8		P
10/13/05	A2	2	4		Filter/Sand/Debris	24.3		P
10/13/05	A2	3	4		Filter/Sand/Debris	24.3		P
10/13/05	A2	4	4		Filter/Sand/Debris	24.3		P
10/13/05	A2	5	4		Filter/Sand/Debris	27.8		P
10/13/05	A2	6	4		Filter/Sand/Debris	27.8		P
10/13/05	A2	7	4		Filter/Sand/Debris	27.8		P
10/13/05	A2	8	4		Filter/Sand/Debris	34.7		P
10/13/05	A2	9	4		Filter/Sand/Debris	20.8		P
10/13/05	A2	10	4		Filter/Sand/Debris	20.8		P
10/13/05	A3	1	4		Filter/Sand/Debris	20.8		P
10/13/05	A3	2	4		Filter/Sand/Debris	24.3		P
10/13/05	A3	3	4		Filter/Sand/Debris	34.7		P
10/13/05	A3	4	4		Filter/Sand/Debris	24.3		P
10/13/05	A3	5	4		Filter/Sand/Debris	24.3		P
10/13/05	A3	6	4		Filter/Sand/Debris	20.8		P
10/13/05	A3	7	4		Filter/Sand/Debris	20.8		P
10/13/05	A3	8	4		Filter/Sand/Debris	27.8		P
10/13/05	A3	9	4		Filter/Sand/Debris	27.8		P
10/13/05	A3	10	4		Filter/Sand/Debris	27.8		P
10/13/05	A4	1	4		Filter/Sand/Debris	24.3		P
10/13/05	A4	2	4		Filter/Sand/Debris	20.8		P
10/13/05	A4	3	4		Filter/Sand/Debris	20.8		P
10/13/05	A4	4	4		Filter/Sand/Debris	20.8		P
10/13/05	A4	5	4		Filter/Sand/Debris	24.3		P
10/13/05	A4	6	4		Filter/Sand/Debris	20.8		P
10/13/05	A4	7	4		Filter/Sand/Debris	20.8		P
10/13/05	A4	8	4		Filter/Sand/Debris	27.8		P
10/13/05	A4	9	4		Filter/Sand/Debris	34.7		P
10/13/05	A4	10	4		Filter/Sand/Debris	38.2		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
10/13/05	B4	1	4		Filter/Sand/Debris	24.3		P
10/13/05	B4	2	4		Filter/Sand/Debris	20.8		P
10/13/05	B4	3	4		Filter/Sand/Debris	20.8		P
10/13/05	B4	4	4		Filter/Sand/Debris	20.8		P
10/13/05	B4	5	4		Filter/Sand/Debris	17.4		P
10/13/05	B4	6	4		Filter/Sand/Debris	20.8		P
10/13/05	B4	7	4		Filter/Sand/Debris	20.8		P
10/13/05	B4	8	4		Filter/Sand/Debris	20.8		P
10/13/05	B4	9	4		Filter/Sand/Debris	27.8		P
10/13/05	B4	10	4		Filter/Sand/Debris	24.3		P
10/13/05	C4	1	4		Filter/Sand/Debris	24.3		P
10/13/05	C4	2	4		Filter/Sand/Debris	24.3		P
10/13/05	C4	3	4		Filter/Sand/Debris	27.8		P
10/13/05	C4	4	4		Filter/Sand/Debris	27.8		P
10/13/05	C4	5	4		Filter/Sand/Debris	24.3		P
10/13/05	C4	6	4		Filter/Sand/Debris	20.8		P
10/13/05	C4	7	4		Filter/Sand/Debris	20.8		P
10/13/05	C4	8	4		Filter/Sand/Debris	20.8		P
10/13/05	C4	9	4		Filter/Sand/Debris	20.8		P
10/13/05	C4	10	4		Filter/Sand/Debris	27.8		P
10/13/05	D4	1	4		Filter/Sand/Debris	20.8		P
10/13/05	D4	2	4		Filter/Sand/Debris	20.8		P
10/13/05	D4	3	4		Filter/Sand/Debris	17.4		P
10/13/05	D4	4	4		Filter/Sand/Debris	24.3		P
10/13/05	D4	5	4		Filter/Sand/Debris	34.7		P
10/13/05	D4	6	4		Filter/Sand/Debris	27.8		P
10/13/05	D4	7	4		Filter/Sand/Debris	34.7		P
10/13/05	D4	8	4		Filter/Sand/Debris	20.8		P
10/13/05	D4	9	4		Filter/Sand/Debris	24.3		P
10/13/05	D4	10	4		Filter/Sand/Debris	17.4		P
10/13/05	E4	1	4		Filter/Sand/Debris	24.3		P
10/13/05	E4	2	4		Filter/Sand/Debris	20.8		P
10/13/05	E4	3	4		Filter/Sand/Debris	27.8		P
10/13/05	E4	4	4		Filter/Sand/Debris	20.8		P
10/13/05	E4	5	4		Filter/Sand/Debris	20.8		P
10/13/05	E4	6	4		Filter/Sand/Debris	24.3		P
10/13/05	E4	7	4		Filter/Sand/Debris	20.8		P
10/13/05	E4	8	4		Filter/Sand/Debris	20.8		P
10/13/05	E4	9	4		Filter/Sand/Debris	20.8		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
10/13/05	E4	10	4		Filter/Sand/Debris	20.8		P
10/13/05	F4	1	4		Filter/Sand/Debris	27.8		P
10/13/05	F4	2	4		Filter/Sand/Debris	27.8		P
10/13/05	F4	3	4		Filter/Sand/Debris	24.3		P
10/13/05	F4	4	4		Filter/Sand/Debris	17.4		P
10/13/05	F4	5	4		Filter/Sand/Debris	20.8		P
10/13/05	F4	6	4		Filter/Sand/Debris	27.8		P
10/13/05	F4	7	4		Filter/Sand/Debris	20.8		P
10/13/05	F4	8	4		Filter/Sand/Debris	20.8		P
10/13/05	F4	9	4		Filter/Sand/Debris	20.8		P
10/13/05	F4	10	4		Filter/Sand/Debris	20.8		P
10/13/05	G4	1	4		Filter/Sand/Debris	24.3		P
10/13/05	G4	2	4		Filter/Sand/Debris	27.8		P
10/13/05	G4	3	4		Filter/Sand/Debris	27.8		P
10/13/05	G4	4	4		Filter/Sand/Debris	34.7		P
10/13/05	G4	5	4		Filter/Sand/Debris	20.8		P
10/13/05	G4	6	4		Filter/Sand/Debris	20.8		P
10/13/05	G4	7	4		Filter/Sand/Debris	20.8		P
10/13/05	G4	8	4		Filter/Sand/Debris	20.8		P
10/13/05	G4	9	4		Filter/Sand/Debris	20.8		P
10/13/05	G4	10	4		Filter/Sand/Debris	27.8		P
10/13/05	G1	1	4		Filter/Sand/Debris	20.8		P
10/13/05	G1	2	4		Filter/Sand/Debris	20.8		P
10/13/05	G1	3	4		Filter/Sand/Debris	20.8		P
10/13/05	G1	4	4		Filter/Sand/Debris	20.8		P
10/13/05	G1	5	4		Filter/Sand/Debris	24.3		P
10/13/05	G1	6	4		Filter/Sand/Debris	24.3		P
10/13/05	G1	7	4		Filter/Sand/Debris	24.3		P
10/13/05	G1	8	4		Filter/Sand/Debris	27.8		P
10/13/05	G1	9	4		Filter/Sand/Debris	27.8		P
10/13/05	G1	10	4		Filter/Sand/Debris	34.7		P
10/13/05	F1	1	4		Filter/Sand/Debris	34.7		P
10/13/05	F1	2	4		Filter/Sand/Debris	17.4		P
10/13/05	F1	3	4		Filter/Sand/Debris	17.4		P
10/13/05	F1	4	4		Filter/Sand/Debris	34.7		P
10/13/05	F1	5	4		Filter/Sand/Debris	31.3		P
10/13/05	F1	6	4		Filter/Sand/Debris	27.8		P
10/13/05	F1	7	4		Filter/Sand/Debris	24.3		P
10/13/05	F1	8	4		Filter/Sand/Debris	27.8		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
10/13/05	F1	9	4		Filter/Sand/Debris	27.8		P
10/13/05	F1	10	4		Filter/Sand/Debris	27.8		P
10/13/05	E1	1	4		Filter/Sand/Debris	20.8		P
10/13/05	E1	2	4		Filter/Sand/Debris	34.7		P
10/13/05	E1	3	4		Filter/Sand/Debris	27.8		P
10/13/05	E1	4	4		Filter/Sand/Debris	27.8		P
10/13/05	E1	5	4		Filter/Sand/Debris	24.3		P
10/13/05	E1	6	4		Filter/Sand/Debris	20.8		P
10/13/05	E1	7	4		Filter/Sand/Debris	24.3		P
10/13/05	E1	8	4		Filter/Sand/Debris	20.8		P
10/13/05	E1	9	4		Filter/Sand/Debris	27.8		P
10/13/05	E1	10	4		Filter/Sand/Debris	24.3		P
10/13/05	D1	1	4		Filter/Sand/Debris	34.7		P
10/13/05	D1	2	4		Filter/Sand/Debris	27.8		P
10/13/05	D1	3	4		Filter/Sand/Debris	24.3		P
10/13/05	D1	4	4		Filter/Sand/Debris	27.8		P
10/13/05	D1	5	4		Filter/Sand/Debris	24.3		P
10/13/05	D1	6	4		Filter/Sand/Debris	27.8		P
10/13/05	D1	7	4		Filter/Sand/Debris	20.8		P
10/13/05	D1	8	4		Filter/Sand/Debris	20.8		P
10/13/05	D1	9	4		Filter/Sand/Debris	20.8		P
10/13/05	D1	10	4		Filter/Sand/Debris	27.8		P
10/13/05	C1	1	4		Filter/Sand/Debris	27.8		P
10/13/05	C1	2	4		Filter/Sand/Debris	20.8		P
10/13/05	C1	3	4		Filter/Sand/Debris	20.8		P
10/13/05	C1	4	4		Filter/Sand/Debris	24.3		P
10/13/05	C1	5	4		Filter/Sand/Debris	27.8		P
10/13/05	C1	6	4		Filter/Sand/Debris	27.8		P
10/13/05	C1	7	4		Filter/Sand/Debris	27.8		P
10/13/05	C1	8	4		Filter/Sand/Debris	24.3		P
10/13/05	C1	9	4		Filter/Sand/Debris	27.8		P
10/13/05	C1	10	4		Filter/Sand/Debris	20.8		P
10/13/05	B1	1	4		Filter/Sand/Debris	20.8		P
10/13/05	B1	2	4		Filter/Sand/Debris	17.4		P
10/13/05	B1	3	4		Filter/Sand/Debris	27.8		P
10/13/05	B1	4	4		Filter/Sand/Debris	27.8		P
10/13/05	B1	5	4		Filter/Sand/Debris	27.8		P
10/13/05	B1	6	4		Filter/Sand/Debris	20.8		P
10/13/05	B1	7	4		Filter/Sand/Debris	20.8		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
8/10/05	A1	1	1	A1	Pad Cyclone sand	17.4		P
8/10/05	A1	2	1	A1	Pad Cyclone sand	20.8		P
8/10/05	A1	3	1	A1	Pad Cyclone sand	20.8		P
8/10/05	A1	4	1	A1	Pad Cyclone sand	17.4		P
8/10/05	A1	5	1	A1	Pad Cyclone sand	20.8		P
8/10/05	A1	6	1	A1	Pad Cyclone sand	24.3		P
8/10/05	A1	7	1	A1	Pad Cyclone sand	20.8		P
8/10/05	A1	8	1	A1	Pad Cyclone sand	17.4		P
8/10/05	A1	9	1	A1	Pad Cyclone sand	17.4		P
8/10/05	A1	10	1	A1	Pad Cyclone sand	17.4		P
8/10/05	B1	1	1	B1	Pad Cyclone sand	20.8		P
8/10/05	B1	2	1	B1	Pad Cyclone sand	20.8		P
8/10/05	B1	3	1	B1	Pad Cyclone sand	20.8		P
8/10/05	B1	4	1	B1	Pad Cyclone sand	20.8		P
8/10/05	B1	5	1	B1	Pad Cyclone sand	17.4		P
8/10/05	B1	6	1	B1	Pad Cyclone sand	24.3		P
8/10/05	B1	7	1	B1	Pad Cyclone sand	17.4		P
8/10/05	B1	8	1	B1	Pad Cyclone sand	20.8		P
8/10/05	B1	9	1	B1	Pad Cyclone sand	20.8		P
8/10/05	B1	10	1	B1	Pad Cyclone sand	17.4		P
8/12/05	B2	40	1	B2	Cyclone / filter	17.4		P
8/12/05	A2	41	1	A2	Cyclone / filter	17.4		P
8/12/05	A2	42	1	A2	Cyclone / filter	20.8		P
8/12/05	A2	43	1	A2	Cyclone / filter	20.8		P
8/12/05	A2	44	1	A2	Cyclone / filter	24.3		P
8/12/05	A2	45	1	A2	Cyclone / filter	17.4		P
8/12/05	A2	46	1	A2	Cyclone / filter	17.4		P
8/12/05	A2	47	1	A2	Cyclone / filter	17.4		P
8/12/05	A2	48	1	A2	Cyclone / filter	24.3		P
8/12/05	A2	49	1	A2	Cyclone / filter	20.8		P
8/12/05	A2	50	1	A2	Cyclone / filter	20.8		P
8/12/05	C1	11	1	C1	Cyclone / filter cake	17.4		P
8/12/05	C1	12	1	C1	Cyclone / filter cake	17.4		P
8/12/05	C1	13	1	C1	Cyclone / filter cake	17.4		P
8/12/05	C1	14	1	C1	Cyclone / filter cake	20.8		P
8/12/05	C1	15	1	C1	Cyclone / filter cake	24.3		P
8/12/05	C1	16	1	C1	Cyclone / filter cake	17.4		P
8/12/05	C1	17	1	C1	Cyclone / filter cake	20.8		P
8/12/05	C1	18	1	C1	Cyclone / filter cake	20.8		P

Date	Location	Test No.	Lift No.	Subcell Grid No.	Waste Source	Pocket Pentrometer (Tons/FT^2)	Comments	Test result
10/13/05	B1	8	4		Filter/Sand/Debris	20.8		P
10/13/05	B1	9	4		Filter/Sand/Debris	20.8		P
10/13/05	B1	10	4		Filter/Sand/Debris	17.4		P
10/13/05	H4	1	4		Filter/Sand/Debris	24.3		P
10/13/05	H4	2	4		Filter/Sand/Debris	27.8		P
10/13/05	H4	3	4		Filter/Sand/Debris	27.8		P
10/13/05	H4	4	4		Filter/Sand/Debris	27.8		P
10/13/05	H4	5	4		Filter/Sand/Debris	34.7		P
10/13/05	H4	6	4		Filter/Sand/Debris	20.8		P
10/13/05	H4	7	4		Filter/Sand/Debris	20.8		P
10/13/05	H4	8	4		Filter/Sand/Debris	20.8		P
10/13/05	H4	9	4		Filter/Sand/Debris	20.8		P
10/13/05	H4	10	4		Filter/Sand/Debris	20.8		P
10/13/05	H5	1	4		Filter/Sand/Debris	27.8		P
10/13/05	H5	2	4		Filter/Sand/Debris	20.8		P
10/13/05	H5	3	4		Filter/Sand/Debris	20.8		P
10/13/05	H5	4	4		Filter/Sand/Debris	20.8		P
10/13/05	H5	5	4		Filter/Sand/Debris	20.8		P
10/13/05	H5	6	4		Filter/Sand/Debris	34.7		P
10/13/05	H5	7	4		Filter/Sand/Debris	27.8		P
10/13/05	H5	8	4		Filter/Sand/Debris	24.3		P
10/13/05	H5	9	4		Filter/Sand/Debris	24.3		P
10/13/05	H5	10	4		Filter/Sand/Debris	20.8		P